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REPORT

of the

SURVEY OF COURSES AND CURRICULA

of the

UNIVERSITY OF ILLINOIS

Champaign-Urbana

Senate Committee on Educational Policy

1939

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REPORT

of the

SURVEY OF COURSES AND CURRICULA

of the

UNIVERSITY OF ILLINOIS

at

Champaign-Urbana

Senate Committee on Educational Policy

J. O. Draffin
H. N. Hillebrand
Simon Litman
W. S. Monroe, Chairman
G. R. Morrow
C. E. Palmer
W. A. Ruth

MAY, 1939

C
Illinois

PREFACE

The courses and curricula of an institution reflect certain aspects of its educational policy. The number of courses and curricula offered, the relationship between courses concerned with a particular area of knowledge, the indications and suggestions to students in regard to courses to be pursued for a given purpose, and the policies and practices of departments, schools, and colleges with regard to the appraisal and re-organization of courses and curricula are matters of importance, not only because of the implications of educational policy, but also because they are related to certain aspects of institutional economy.

Although the Survey of Courses and Curricula has engaged the attention of the Committee for a full year, it is aware that the scope of the report is limited. The resources available to the Committee did not permit extended inquiry along certain lines, and some possible lines of investigation were not attempted. The Committee also realizes that the conditions under which the activities of such a group are carried on prevent continuous and intensive work, and hence it will not be surprised if some inconsistencies and errors are noted. However, more than casual effort has been made to have the factual statements correct for the date when the data were collected. In a few cases, changes have been made in order to have the statements in agreement with conditions on the date of the report.

The Committee suggests that the report be studied with reference to the following general topics:

(1) Effectiveness of the University's program of courses and curricula as means of educating students, especially at the undergraduate level.

(2) Economy of the institution in utilizing its resources for the education of students.

(3) Practices and policies with reference to planning, appraising, and reorganizing the educational program.

10 Survey 90 R.13, Brunner

As stated above, the Committee was unable to collect some desired data, and hence a reader of this report will not find a basis for definite and detailed answers to the questions implied by these topics. However, the Committee believes that the information reported in Chapters II and III does provide a basis for tentative, partial answers. It is the hope of the Committee that the report will stimulate thinking leading to constructive action.

Although the entire report should be studied with reference to the three topics, the Committee offers the following suggestions with reference to the sections most pertinent to the implied questions:

Topic 1. Chapter III: Section A, especially Table XXV; Section B; Section D, especially Table XXVIII; Exhibit A.

Topic 2. Chapter III: Section A, especially Table XXV; Figures Ia, Ib, Ic; Table XXVII; Section C.

Topic 3. Chapter II: especially the portions dealing with practices and policies of the colleges and schools; Chapter III: Section A, page 56; Section E.

In interpreting the tabular presentations of findings, the reader should consult the accompanying text and make certain that he understands precisely what the figures represent. Furthermore, he should remember that comparisons are hazardous unless attention is given to conditioning factors.

Since the Senate Committee on Educational Policy has no appropriation, it has been necessary to depend upon funds and services from various sources. The Committee is especially indebted to the Provost's Office for funds, to the Bureau of Institutional Research for funds and services, and to the Bureau of Educational Research for services. A list of the departmental representatives who assisted the Committee by preparing the reports which appear as Exhibit B is given in Chapter I. To these persons and to others who contributed to the work by responding to the questionnaire or in other ways, the Committee

acknowledges its indebtedness.

Senate Committee on Educational Policy

J. O. Draffin
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May 31, 1939

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Note: A copy of Exhibit A will be furnished to each Dean or Director and each department will receive a copy of its chart. Requests for additional copies should be addressed to the Chairman of the Senate Committee on Educational Policy.

Exhibit B exists only in manuscript form. Persons desiring to examine this material should contact a member of the Committee.

SURVEY OF COURSES AND CURRICULA

CHAPTER I

INTRODUCTION

Purpose. In a letter dated March 29th, 1938, President A. C. Willard asked the Senate Committee on Educational Policy to undertake a study of the present course offerings of the University of Illinois and report on cases wherein "courses being offered in one department are also offered in another, together with such recommendations as your Committee may wish to offer."

As the Committee studied the matter, two lines of inquiry were formulated: (1) The program or programs of study outlined or indicated for students taking extended work within a department, and (2) Certain questions concerning the courses offered by the several departments. (See Questionnaire, Appendix A.) Later there was added an inquiry into the policies and practices of departments in regard to the revision of courses and curricula and the development of new courses. (See Outline for Departmental Reports, Appendix B.)

Note: The Departments of Military Bands and Military Science and Tactics were not included in this survey. A separate report is to be made on the Chicago departments.

Procedure. The investigation of departmental programs of study was limited to the undergraduate level. Data in regard to course prerequisites and the placement of courses in prescribed curricula were taken from the Annual Register for 1937-38. Additional information was obtained from the questionnaire which was filled out for each course and by personal consultation with heads of departments. The information collected by these means is presented in graphical form in Exhibit A. After the charts were completed, the several department heads were given an opportunity to review the presentation of the data.

For the second inquiry, a questionnaire was developed in consultation with the Director of the Bureau of Institutional Research. (See Appendix A for copy of the questionnaire.) Copies from a preliminary printing of the

questionnaire were distributed during the summer of 1938 for the purpose of trying it out and of obtaining information about courses offered only during the summer session. On the basis of this experience, a few minor changes were made and after the September registration, the questionnaire was generally distributed through the several Deans and Directors. The data from the questionnaire were tabulated under the direction of the Chairman of the Committee. A study of the specific question of overlapping of courses has been made by the Director of the Bureau of Institutional Research.

As a means of ascertaining the practices of departments in regard to the revision of courses and curricula, and the development of new courses and of guarding against erroneous interpretation of the tabulations from the questionnaire, the Committee obtained the assistance of a representative from each department. The list of these co-operating persons follows:

LIBERAL ARTS AND SCIENCES

Astronomy	Philip S. Riggs
Bacteriology	Fred W. Tanner
Botany	John T. Buchholz
Chemistry	C. S. Marvel
Classics	H. V. Canter
English	B. L. Jefferson
Entomology	C. L. Metcalf
Geology	F. W. DeWolf
Geography	W. O. Blanchard
German	A. W. Aron
History	W. S. Robertson
Mathematics	H. R. Brahana
Philosophy	M. T. McClure
Physiology	M. T. McClure
Political Science	J. A. Fairlie
Psychology	Herbert Woodrow
Romance Languages	D. H. Carnahan
Sociology	J. W. Albig
Zoology	H. J. Van Cleave

COMMERCE

Business Organization and Operation	H. T. Scovill
Economics	M. H. Hunter

ENGINEERING
- Ceramic Engineering ..... R. K. Hursh
- Civil Engineering ..... J. Vawter
- Electrical Engineering ..... C. A. Keener
- Engineering ..... H. H. Jordan
- General Engineering Drawing ..... A. Jorgensen
- Mechanidal Engineering ..... David G. Ryan
- Mining and Metallurgical Engineering ..... H. P. Nicholson
- Physics ..... G. M. Almy
- Railway Engineering ..... J. K. Tuthill
- Theoretical and Applied Mechanics ..... J. O. Smith

AGRICULTURE
- Agricultural Administration ..... R. R. Hudelson
- Agricultural Economics ..... R. C. Ross
- Agricultural Engineering ..... R. I. Shawl
- Agronomy ..... O. T. Bonnett
- Animal Husbandry ..... W. E. Carroll
- Dairy Husbandry ..... W. W. Yapp
- Home Economics ..... Harriett Barto
- Horticulture ..... W. A. Ruth
- Forestry ..... J. N. Spaeth

EDUCATION ..... O. F. Weber

FINE AND APPLIED ARTS
- Architecture ..... F. M. Lescher
- Art ..... C. E. Palmer
- Landscape Architecture ..... O. G. Schaffer
- Music ..... F. B. Stiven

JOURNALISM ..... F. S. Siebert

LAW ..... M. I. Schnebly

PHYSICAL EDUCATION
- Physical Education for Men ..... G. T. Stafford
- Physical Education for Women ..... Louise Freer
- Hygiene ..... J. Howard Beard

LIBRARY SCIENCE ..... Amelia Krieg

These persons were furnished with the tabulation of data from the questionnaire and an outline of the desired departmental report. (See Appendix B.) The reports from the several departments are given in Exhibit B.

Limitations of This Report. The situation with which the Committee has attempted to deal is exceedingly complex. Furthermore, the resources of the Committee have been limited. Under these conditions it is likely that some pertinent data were not collected and some of the summary statements have not been appropriately qualified. However, in the judgment of the Committee the summaries by Colleges and Schools (Chapter II) and the

General Summary (Chapter III) present reasonably accurate pictures of the situation described. The evaluative comments in Chapter III and the recommendations (Chapter IV) express judgments of the Committee.

CHAPTER II

THE COLLEGES AND SCHOOLS

The purpose of this chapter is to present by colleges and schools a summary of the more important information obtained by means of the questionnaire, plus a statement of the practices and policies of the several divisions of the University relative to the appraisal and revision of existing courses, and the development of new courses. As a background for this information, there is an introductory statement of the purpose of the college or school. The summaries for Education, Journalism, Law, Library Science, and Physical Education were prepared by the chairman of the Senate Committee on Educational Policy from the departmental reports. In each case, the summary was submitted to the person preparing the departmental report for approval. In the case of the other colleges, the summary was prepared by a committee under the chairmanship of the college member of the Senate Committee on Educational Policy. It will be noted that some of the summaries are more elaborate than others. This is due in part to the availability of information which seemed pertinent to the purpose of this report.

COLLEGE OF LIBERAL ARTS AND SCIENCES

The College of Liberal Arts and Sciences provides opportunities for a liberal education in the sciences and the humanities, preparation for teaching in secondary schools, and training leading to advanced study and research in the graduate school. In addition, the College offers curricula in chemistry, chemical engineering, and home economics, and pre-professional curricula in medicine, dentistry, and pharmacy. Lastly, the College provides educational opportunities for students preparing to enter the College of Education, the College of Law, and the School of Journalism; it also gives instruction to students in other colleges and schools whose curricula include courses given in the departments of Liberal Arts and Sciences.

All courses given in the College are under the immediate supervision of the departments, which are primarily responsible for the content and organization of the courses and for their revision when and as this is necessary. Most of the departments report that their courses are frequently revised, though in a few cases (e.g. English, Mathematics) revisions are reported to be sparing and infrequent. The revision of a course seems usually to be in the hands of the instructor or group of instructors teaching it, though sometimes a larger group, and even the entire staff of the department, is called into consultation (cf. reports from Chemistry, English, German, Classics). Practically all departments report that they have recently examined their list of courses with a view to reducing their number by better articulation and integration. Two departments (Entomology and German) report a considerable reduction of the number of their courses within recent years as a result of such scrutiny.

The departments are also responsible for determining the proper sequence of their courses. Most departments provide for some sequence by announcing prerequisites, though there is great variety in the kind of prerequisites announced by the several departments and in the rigidity and elaborateness

of the resulting sequences. All changes in prerequisites are presented to the College Policy Committee for approval and reported to the Faculty. In practice the department's wishes in such matters are seldom denied. Besides the announced prerequisites, some departments (Zoology, Entomology, Mathematics) have formulated two or more programs of study representing differences of emphasis within the total field covered by the department; and one department (Chemistry) has set up two distinct four-year curricula.

All new courses and all important changes in the content of existing courses must be approved by the Faculty of the College. Proposals for new courses and for important changes in existing courses come before the College Policy Committee, which studies the requests and makes recommendations to the Faculty. New courses have been approved by the Faculty on the following grounds. (a) in order to provide instruction in a field not already covered; (b) to improve instruction by a better grouping of students or a better adaptation of content to a special group of students; and sometimes (c) to give expression to the scholarly interests of a member of the teaching staff. Proposals for new courses are usually examined with great care by the Committee and are approved only when prospective enrollment would seem to justify them, and when the necessary budgetary adjustments can be made.

The special curricula of the College are subjected to frequent examination and revision. The pre-medical curriculum is administered by a special committee of the Faculty appointed for that purpose. This curriculum was extensively revised in 1937. The curriculum in chemical engineering was revised in 1938. The curriculum in chemistry has been revised three or four times within the last fifteen years. The College is now considering the establishment of two new curricula in order to serve more adequately the educational needs of certain students: viz. a curriculum for students preparing to teach in the secondary schools, and a curriculum in social work. All proposals for the establishment of new curricula or the revision of existing ones come before the College Policy Committee for study before being trans-

mitted to the Faculty for action.

The general curriculum of the College has been practically unchanged since the establishment of the College in its present form in 1913. A few minor changes in requirements for graduation were adopted about ten years ago, but without affecting materially the content or organization of the curriculum. The need for a fresh examination of the problem of general education and possibly for a revision of the general curriculum has been increasingly felt in recent years, and last October, in response to the action of the University Senate recommending the establishment of a general division or a new general curriculum in the College of Liberal Arts and Sciences, the Dean and the Executive Committee of the College appointed a sub-committee to make a thorough study of the matter and formulate concrete proposals. This sub-committee's report and proposals are now being considered by the Executive Committee of the College.

Several measures for the improvement of the educational program of the College have been adopted in recent years. A tutorial system for superior students, intended to provide opportunity for independent study and investigation under the guidance of members of the Faculty, was adopted in 1935 and is producing excellent (though for lack of adequate funds, rather limited) results. The privilege of admission to individual curricula, in which the ordinary requirements for graduation may be modified or waived, has recently been extended to superior students. The grouping of departments into divisions (the Division of Biological Sciences, the Division of Language and Literature, the Division of Social Sciences), each headed by a committee consisting of representatives from the constituent departments, has provided a means whereby departments with common interests and related subject-matter may consult upon common educational problems and discuss the adjustment of their educational programs to one another. Two of these divisions have studied with some care the question of general or inter-departmental courses,

and in one case the outline of such a general course has been prepared and approved by the division.

The following tables were compiled from the departmental reports. In Table I, the hours given are "net hours", i.e. the number of hours for which a student may obtain credit. (See Chapter III). In reading Table III, it should be kept in mind that general education was not defined in the questionnaire. Hence, the differences appearing between what would seem to be comparable departments, e.g. English and Romance Languages, Political Science and Sociology, Geology and Geography, Entomology and Bacteriology, can hardly be taken as evidence of differences in the educational policies of these departments, since they may (and probably do) result from a divergence of opinion as to the meaning of general education.

TABLE I. NUMBER OF COURSES AND HOURS

College of Liberal Arts and Sciences

Department	Undergraduate		Advanced Undergraduate and Graduate		Graduate		Total		
	Number	Hours	Number	Hours	Number	Units	Number	Hours	Units
Astronomy	2	6	3	9	3	2	8	15	2
*Bacteriology	2	5	6	16	3	5	11	21	5
*Botany	10	28	20	61	18	13	48	89	13
*Chemistry	19	44	39	91	41	28¾	99	135	28¾
Classics	19	52	15	40	18	18	52	92	18
*English	27	68	53	154	45	48	125	222	48
Entomology	10	32	6	23	1	2	17	55	2
*Geology and	8	17	11	34	13	18	32	51	18
Geography	7	17½	10	28	2	4	19	45½	4
*German	19	51	7	18	9	18	35	69	18
History	34	90	38	106	28	28	100	196	28
*Mathematics	14	29	19	57	39	39	72	86	39
Philosophy	5	13	12	38	10	10	27	51	10
Physiology	7	28	2	10	3	2¾	12	38	2¾
*Political Science	3	7	18	47	14	14	35	54	14
Psychology	8	22	16	39	10	9½	34	61	9½
Romance Languages	35	97	20	48	31	31	86	145	31
Sociology	4	10	17	51	13	13	34	61	13
Zoology	11	35	17	73	16	16	44	108	16
TOTAL	244	651½	329	943	317	320	890	1594½	320

*All hours given are Net Total Hours. The departments marked thus are those in which the Net Total Hours are less than the Total Hours.

TABLE II. OFFERING OF COURSES

Department	Offered Regularly %	Offered Alternately %	Offered Irregularly %	Not Given* %
Astronomy	75	25	--	--
Bacteriology	100	--	--	--
Botany	75	25	--	--
Chemistry	94	6	--	--
Classics	50	46	4	--
English	77	14	9	--
Entomology	35	60	5	--
Geology and Geography	55	45	--	--
German	78	14	8	--
History	70	10	10	10
Mathematics	65	5	30	--
Philosophy	75	--	15	10
Physiology	100	--	--	--
Political Science	82	6	3	9
Psychology	74	--	26	--
Romance Languages	68	25	7	--
Sociology	90	--	10	--
Zoology	85	11	4	--

*Not given 1932-33 to 1938-39

TABLE III. EDUCATIONAL PURPOSE OF COURSES

Department	Primarily for General Education %	Primarily for Departmental Specialization %
Astronomy	38	62
Bacteriology	35	65
Botany	23	77
Chemistry	11	89
Classics	15	85
English	18	82
Entomology	12	88
Geology	13	87
Geography	77	23
German	54	46
History	"Nearly all"	
Mathematics	30	70
Philosophy	63	37
Physiology	--	--
Political Science	29	71
Psychology	30	70
Romance Languages	59	41
Sociology	85	15
Zoology	30	70

COLLEGE OF COMMERCE AND BUSINESS ADMINISTRATION

The primary function of the College is to train students for business careers. Its courses deal largely with fundamentals and principles of industry, commerce, finance, and transportation; because of their general educational value, they are also of service to students in other departments of the University. Economics may be taken as a major in the College of Liberal Arts and Sciences, and it is selected as such by a number of those enrolled in that College.

TABLE IV. SUMMARY OF COURSES

College of Commerce

Division and Classification	Total Courses	Net Total Hours
Business Organization and Operation:		
Undergraduate	15	30
Advanced and graduate	35	97
Graduate	20	20 units*
Total	70	207
Economics:		
Undergraduate	6	20
Advanced and graduate	48	138
Graduate	37	37 units
Total	91	306
Total (Both Departments):		
Undergraduate	104	285
Graduate	57	57 units
Grand Total	161	513

*One unit = 4 semester hours.

Courses and Programs of Study

Beginning with the academic year 1938-39, the four-year course of the College has been divided into a Lower and an Upper Division. The work of the first two years (Lower Division) is organized into a uniform program of prescribed courses in Economics, Accountancy, Rhetoric, Speech, and a limited

number of recommended electives. While the program of study is arranged primarily so as to prepare students for the fields of concentration in the Upper Division, it gives to those who stay in the College only two years an opportunity to acquire a certain amount of general culture in combination with the training for business. The fields of concentration in the Upper Division include: Accountancy, Banking and Finance, Commerce and Law, Commercial Teaching, Economics, Industrial Administration, Management, Marketing, and Public Affairs. Thus a student can follow a program of study particularly adapted to the line of endeavor which he selects to enter after leaving college. The graduate work is so arranged as to permit the student either to work for the academic degrees of M.S. and Ph.D. or of a professional degree in Master of Business Administration. The M.B.A. degree is not granted as a result of specialization and research in some particular field of study; its purpose is to give the graduate student a comprehensive survey of the problems confronting business executives in their formulation of policies and in their coordination of work of various departments in a business unit.

With minor exceptions the listed courses are offered regularly each year, and in some cases the courses are repeated each semester. The prerequisites are based on needed content and are, as a rule, strictly adhered to. The registration is homogeneous in most of the courses; the exceptions are such a course as Economics 2, the service course in Principles, which has this year registered 16 per cent seniors, 40.3 per cent juniors and 40.7 per cent sophomores, and Economics 70, a course in Statistics, in which two graduate students are enrolled in order to become better equipped for doing research in their field of investigation.

Policy of Development

Since 1935, the College has had four standing committees on Educational Policy: Graduate Division, Professional Division, Upper Undergraduate Division, and Lower Undergraduate Division. After an exhaustive and careful study of the former organization of the work of the College, the committee

recommended the abolition of the various curricula and the adoption of the present program of studies. A College committee has been appointed recently by the Executive Committee for the purpose of making recommendations concerning desirable changes in the content of the courses and in their coordination, as well as the elimination of undesirable duplication and the addition of new courses. A separate Committee of the Department of Economics has been making a similar study of graduate work in that Department. Both the Department of Business Organization and Operation and of Economics have pursued a conservative policy with regard to the addition of new courses; no new course has been added unless it was found that such a course was educationally desirable.

COLLEGE OF ENGINEERING

General Functions

The functions of the College of Engineering may be placed in three groups: (1) research,(2) public service, and (3) teaching. Although the principal purpose of this report is to deal with the teaching aspect, the first two items will be commented upon.

Research. The general aspects of organized research, such as the distribution of funds and supervision of the publication of results in bulletins are administered mainly through the Engineering Experiment Station. The research may be divided into two types:

(a) That for which funds are supplied by University appropriations with the work carried on by the regular teaching and research staff in such time as they may have after their other duties are performed, and

(b) The work for which funds are supplied wholly or in part by outside organizations or associations under contracts with the University. This second type of research is known as Cooperative Research and embraces not only the work done in the College of Engineering itself but also a part of the research carried on by Chemical Engineering in the College of Liberal Arts and Sciences. Some of the cooperative projects, such as warm-air heating, stresses in railroad track, fatigue of metals, concrete and reinforced concrete, and stresses in car wheels, have been in progress for many years.

Public Service. This function consists of sponsoring numerous gatherings, short courses and symposiums. These are often related to research and to the broader aspects of teaching: some regular classes, especially in the upper levels, are often dismissed in order to allow the students to attend these group meetings. Typical of these gatherings are the Short Course for Sewage Plant Operators, the Conference for Highway Engineers, the Enamel Symposium, the Mineral Industries Conference, the Conference on Air Conditioning, and the Short Course on Coal Utilization.

Teaching. The teaching is done in nine departments within the college and one in the College of Agriculture. Of these, eight offer graduate courses in addition to the regular undergraduate courses. There are eight departments which present candidates for undergraduate degrees and eight for graduate degrees. All of the departments are organized with heads of departments, the head of one department, General Engineering Drawing, being also the Associate Dean of the College. The offerings of the various departments are shown in Table V. The Department of Physics, while it has one undergraduate curriculum leading to a degree, has among its students a large number registered in colleges other than the College of Engineering.

Three colleges other than the College of Engineering administer curricula, leading to degrees, which contain a large amount of engineering content. These are: College of Commerce, which administers a curriculum in Industrial Administration; College of Fine and Applied Arts, which administers a curriculum in Architecture; and College of Liberal Arts and Sciences, which administers a curriculum in Chemical Engineering.

TABLE V. DEPARTMENTS AND COURSES

Department	Offers Courses For		Presents Candidates for Degrees in	
	Undergraduates	Graduates	Undergraduate Curricula	Graduate Curricula
Agricultural Engineering	*	No	Yes	No
Ceramics	Yes	Yes	Yes	Yes
Civil Engineering	Yes	Yes	Yes	Yes
Electrical Engineering	Yes	Yes	Yes	Yes
General Engineering	No**	No	Yes	No
General Engineering Drawing	Yes	No	No	No
Mechanical Engineering	Yes	Yes	Yes	Yes
Mining and Metallurgical Engineering	Yes	Yes	Yes	Yes
Physics	Yes	Yes	Yes	Yes
Railway Engineering	Yes	Yes	Yes	Yes
Theoretical and Applied Mechanics	Yes	Yes	No	Yes

* This curriculum is administered by the College of Engineering, but the specialized courses are taught in the College of Agriculture.

** This curriculum is administered by the Dean of the College and the courses leading to the degree are offered by various departments.

Curricula and Courses

Curricula. The College of Engineering offers and administers thirteen separate undergraduate curricula. Each curriculum requires, for graduation, 136 semester hours of scholastic work in addition to the required work in Basic Military Science and Physical Education. The thirteen curricula leading to undergraduate degrees divide, according to the interests and abilities of the students, into twenty-four options. These with the number of students in the various groups are shown in Table VI.

TABLE VI. CURRICULA, OPTIONS, AND STUDENTS

Curriculum	Options	Number of Students		Number of Graduate Registrations, 1938-1939	
		11/1/38	3/1/39	1st Sem.	2nd Sem.
Agricultural Engineering	Machinery and Power Construction and Drainage	25	30	Graduate Work Not Offered	
Ceramic Engineering	Administration Technical	125	118	38	36
Ceramic	None	46	32		
Civil Engineering	General Highway Hydraulic Sanitary Structural City Planning	295	260	48	50
Electrical Engineering	None	355	306	21	31
Engineering Physics	None	40	34	141*	117*
General Engineering	None	176	132	Graduate Work Not Offered	
Mechanical Engineering	Petroleum Technical	647	556	16	21
Metallurgical Engineering	None	109	107		
Mining Engineering	Coal Mining Ore Mining Mining Geology Mine Adminis.	22	21	6	4
Railway Civil Engineering	None	8	7		
Railway Electrical Engineering	None	5	5	2	1
Railway Mechanical Engineering	None	10	12		
Theoretical and Applied Mechanics	None	No Undergraduate Curriculum		37	55

*Includes all graduate registrations in Physics as well as Engineering Physics.

Courses. The College of Engineering offers a total of 178 undergraduate courses totaling 479 semester hours, 70 courses for advanced undergraduates and graduates, totaling 189 1/2 semester hours and 110 courses for graduates. Of these, 46 undergraduate and 36 graduate courses are listed as being offered each semester. The details of the courses are given in Table VII. In addition to the courses enumerated above there is a total of 20 extension (correspondence) courses aggregating 61 semester hours taught by the departments of Civil, Electrical, and Mining Engineering, General Engineering Drawing, and Theoretical and Applied Mechanics. General Engineering Drawing teaches two extra-mural undergraduate courses with a total of 4 semester hours and Civil Engineering teaches two extra-mural graduate courses, each having a credit of one unit.

TABLE VII. COURSES AND HOURS

Undergraduate

Type of Instruction	Semester Hours					Total Courses	Total Hours	Net Total Hours
	1	2	3	4	5			
I. Lecture, recitation and/or quiz	10	16	47	11		84	227	181
II. Laboratory, shop, studio	14	7	6			27	46	40
III. Combination of I and II	1	8	29	16	2	56	178	150
IV. Individual Instruction	2	1	8			11	28	28
TOTAL	27	32	90	27	2	178	479	399

Advanced Undergraduate and Graduate

Type of Instruction	Semester Hours						Total Courses	Total Hours	Net Total Hours
	1/2	1	2	3	4	5			
I.	1	--	9	25	--	--	35	$93\frac{1}{2}$	$93\frac{1}{2}$
II.	--	1	5	5	--	--	11	26	26
III.	--	--	4	17	--	1	22	64	58
IV.	--	--	--	2	--	--	2	6	6
TOTAL	1	1	18	49		1	70	$189\frac{1}{2}$	$183\frac{1}{2}$

Graduate

Type of Instruction	Units				Total Courses	Total Units	Net Total Units
	1/2	1	1 1/2	2			
I.	4	80	-	1	85	84	84
II.	3	2	-	-	5	$3\frac{1}{2}$	$3\frac{1}{2}$
III.	-	3	1	-	4	$4\frac{1}{2}$	$4\frac{1}{2}$
IV.	-	12*	-	4	16	26*	26*
TOTAL	7	97*	1	5	110	118*	118*

* Repeated registration up to four units is permitted in two courses.

Summary

Undergraduate				Graduate		Total	
Elementary		Advanced					
Courses	Hours	Courses	Hours	Courses	Hours	Courses	Hours
178	399	70	$183\frac{1}{2}$	110	472	358	$1054\frac{1}{2}$

Homogeneity of Registration. Fifteen courses or about 6 per cent of the total number of undergraduate courses are heterogeneous, about 30 per cent are relatively homogeneous and the remainder, about 64 per cent, are homogeneous.

Educational Purpose of Courses. Nearly all of the courses offered in the College of Engineering are of the professional specialized character. However, the group of courses entitled "Engineering" and some of the beginning courses in General Engineering Drawing, Physics, Surveying, and Theoretical and Applied Mechanics are of a general nature and might, in a broad way, be classed as contributions towards a general education.

Prerequisites. The content of all the curricula is based on the tools and language common to all technological and scientific courses, i.e., mathematics, chemistry, physics, English and graphic expression or drawing. Because of this common matrix underlying and permeating all courses in engineering there is a close relationship between successive courses. Practically all engineering courses have prerequisites listed in the Annual Register and most of these are of a content character needed to insure that the student has sufficient knowledge to carry on the subject successfully. Where content is the basis, the prerequisites or their equivalents naturally are fairly strictly

enforced, though always with sufficient flexibility to care for the unusual or irregular cases. Where the prerequisite is not of a content character, as for instance "sophomore standing," the programs of the various curricula are so arranged that the student who is required, or is likely, to take that course is able to fit it into his program in his sophomore year. One of the effects of having a scholastic age requirement is to keep the registration in certain courses, mainly laboratory, flowing uniformly and within the capacity of the equipment available for that type of instruction. Where students outside the group normally anticipated wish to register, the scholastic age requirement may be waived if there is room in the section.

Electives. The courses in the various curricula are in the main prescribed. However, all of the curricula contain a certain number of elective hours and these are described in the Annual Register under one or more of three heads as follows: (1) Approved Electives: those courses which may be selected from a list of courses all of which have been specifically approved as being acceptable. (2) Non-Technical Electives: courses which have been specifically designated as permissible and which, from the point of view of engineering, are not of a highly technical character. (3) Technical Electives (sometimes called Technical Options): those courses which may be selected from a limited list of technical courses judged to be particularly appropriate for certain groups of students.

The approximate number of hours of the various electives which a student is required to present in each of the curricula or options leading to a degree is shown in Table VIII.

TABLE VIII. NUMBER OF HOURS OF ELECTIVES IN VARIOUS CURRICULA

Curriculum	Option	Number of Hours of Electives Approved:	Non-Technical:	Technical
Agricultural Engineering	Machinery and Power	12	0	0
	Construction and Drainage	11	0	0
Ceramic Engineering	Administration	8	0	0
	Technical	9	0	6
Ceramics		8	0	9
Civil Engineering	General	6	3	8
	Highway	3	3	0
	Hydraulic	3	3	0
	Sanitary	3	0	0
	Structural	6	3	0
	City Planning	3	0	0
Electrical Engineering		2	3	3
Engineering Physics		6	0	16
General Engineering		14	0	0
Mechanical Engineering	Petroleum	0	0	0
	Technical	0	8	6
Metallurgical Engineering		1-3	0	0
Mining Engineering	Coal Mining	5	0	0
	Ore Mining	5	0	0
	Mining Geology	4	0	0
	Mine Administration	2	0	0
Railway Civil Engineering		4	0	3
Railway Electrical Engineering		0	3	0
Railway Mechanical Engineering		3	6	0

Overlapping Courses. No attempt is made here to discuss completely the matter of overlapping courses since this item is covered for the entire University in another part of this report. However, it seems best to comment briefly on certain general aspects.

In a number of cases there is a duplication or overlapping of courses within a department. This is due to offering, usually as a service course for other departments, a shorter course in a given subject in addition to the regular course.

Some of the courses offered in the College of Engineering overlap, though they do not duplicate, courses in other colleges. There is probably some overlapping of Engineering 39 with Economics 43, of Engineering 10 with

various courses in Economics, and of Engineering 92 and Civil Engineering 90 with Business Law 1, 2, and 3. In no case does the overlapping cover more than a small part of the total subject matter taught. The justification of this overlapping is discussed under the "Program of Development" portion of the Engineering College section of this report.

There is also an overlapping of subject matter between courses in Civil Engineering number 61, 62, 63, 64a, 86, 87, and 89 with those in Architecture numbered 45, 46, 47, 48, 57, 58, and 60. In this case, the overlapping arises through the effort, over a period in excess of fifty years, on the part of each department to give courses which are adapted to the needs of their particular groups of students. The overlapping is therefore more apparent than real for the reason that there are distinct and real differences between the subject matter and the manner of presentation. There are also full sections in each department and therefore there is no increase in the teaching staff because of the apparent overlapping.

Educational Aims

The educational program of the College of Engineering aims at a balance between the various parts of the work so as to produce a group of educated men who may, with the necessary professional practice, become capable engineers. The curricula are neither purely theoretical nor highly vocational, with the tendency towards the theoretical side.

The sections are kept relatively small so that there is usually time for considerable discussion in class and efforts are made to develop initiative and resourcefulness as well as to cultivate and improve the inherent abilities of the students. It is believed that recent efforts in this direction, which are indicated in the next section of this report, have been successful.

In keeping with the unusually large amount of experimental research carried on here, laboratory work is given much prominence. The laboratory instruction has from the beginning been of a high quality and has never

contained the purely vocational elements which prevail in some institutions of the trade-school type nor does it emphasize commercial testing.

The research program of the College is closely linked with the teaching. All of the men on the research staff are members of the various departments and a large number of them teach one or more courses in addition to their research activities. This interrelation of research and teaching has the effect of giving a reality to some phases of the subject matter taught which would not otherwise exist. The Engineering Experiment Station has a number of research graduate assistantships and these are eagerly sought by students here and elsewhere (there are 75 applications for 5 vacancies this year.) This competition makes it possible to select excellent men for the assistantships and consequently there flows from the college a considerable number of graduate students who have, in addition to their studies, helped to carry on a high grade of scientific and technical investigation. This work of educating young men to occupy responsible positions in industry and teaching is one of the important functions of the college.

Program of Development

The general procedure for the development of the educational program of the college together with the necessary modifications has been, until recently, for the Dean to consult with the heads of the various departments, the Executive Committee, and thus keep the curricula and courses in each department coordinated with the changes as they occur in each particular field. While this procedure served fairly well, a more satisfactory method is now in operation.

About six years ago a "Committee on College Policy and Development" was appointed by the Executive Committee. This "College Policy Committee" continually views the entire college and its educational needs and considers means by which the curricula, the courses, and the instruction may be improved. A number of sub-committees have already reported on topics of which the fol-

lowing are typical of the range covered by their studies: Student English, Laboratory Instruction, and Exchange of Instructors with Other Institutions. Some of the suggestions have already been incorporated in the work while others have not yet been introduced, partly because of budgetary considerations. This committee is largely responsible for the introduction of a group of non-technical courses under the designation "Engineering," referred to in the section "Overlapping of Courses," which deal with topics such as law, economics, and industrial relations, all of which are of much importance to engineers but which are not covered with sufficient conciseness in other courses. These courses in "Engineering" are taught by mature, experienced engineers using engineering illustrations and from the engineering point of view rather than from the strictly, and broader, legal or economic point of view. The courses help to round out the program of the student and assist him in integrating his professional practice with the social needs of the time. Not only are these courses of direct benefit to the student but by keeping these ideas before the faculty, especially the younger members, they are also of indirect benefit.

Perhaps one of the most important results of the deliberations of the College Policy Committee has been the inauguration of the "Dual Curricula" in the College of Engineering. In this scheme the more capable and intellectually mature students are permitted, under the guidance of a small committee, to omit certain prescribed courses and to substitute other courses. The effect of this modification is to adapt the curriculum to the individual student and his particular abilities and to allow him to proceed as fast as he is capable of doing; it might be called a modified honors course. The Committee on Dual Curricula can cut across department lines and thus give particularly well qualified students better rounded basic programs than they would otherwise be likely to have.

Probably the greatest single strengthening improvement in the instructional phase of the college program within the past five years has been the

re-introduction of permissive thesis work in the senior year for students of high scholastic achievement. A number of students have availed themselves of this opportunity and some excellent work has been produced. All thesis work is carried out with the student and the instructor working in close co-operation. Naturally, well-supervised thesis work throws a heavy burden on the instructional staff and some of the departments doing this work have been experimenting to find means by which the amount of time and effort required in the instruction in the regular courses might be reduced and still obtain as good, or better, educational results. This experimental work in teaching is still in progress.

One of the important outside agencies which affects the work of the College of Engineering and the standing of its graduates is the Engineer's Council for Professional Development, commonly referred to as the E.C.P.D. This organization, which has functioned about two years, has set up an accrediting agency which, upon the request of an institution, examines its resources, equipment, methods of instruction, courses required and other elements, and accredits, or does not accredit each curriculum of that particular engineering school. A large number of curricula, at institutions all over the country, have not been accredited with the result that these institutions are making strenuous efforts to improve their work. At the University of Illinois the following curricula have not been accredited, though it may be pointed out that only a relatively small number of students are affected by the lack of accrediting of these curricula:

Agricultural Engineering: No curriculum under this classification has been fully accredited at any institution and only three provisionally. The curriculum at the University of Illinois is being revised and it is expected that the revised curriculum will be accredited before the beginning of 1939-1940.

Ceramic Engineering--Administration Option: This was not accredited because it did not contain enough strictly engineering subject matter to

meet the views of the Accrediting Committee. Since the curriculum is intended to be of an administrative rather than a technical one, there is no thought of changing it.

Engineering Physics: The Accrediting Committee considered the curriculum an excellent one, of sound and substantial content, but it lacked sufficient material on the application of theory to qualify it as an engineering rather than as a scientific curriculum. There is no intention of modifying it.

Railway Engineering: The Accrediting Committee felt that these curricula should not exist as separate ones but that they should be made options in mechanical, electrical and civil engineering. The solution of the problems arising here is being sought.

COLLEGE OF AGRICULTURE

There are two general curricula in the College of Agriculture, namely, General Agriculture and General Home Economics, and three specialized curricula, Floriculture, Dairy Technology, and Nutrition and Dietetics. Most students are registered in one of the two general curricula.

In its general agricultural curriculum, the College has adhered to the definition of agricultural education commonly expressed by educators in agricultural colleges. The expressed objects are to provide "a broad education, with specific training for work in the agricultural field and for service to society." To impart both breadth and foundation, forty-eight to fifty-two hours of non-agricultural courses are prescribed. To provide breadth, eight hours of electives must be selected from a list of non-agricultural subjects, and there are, in addition, twenty-two to twenty-six hours of free electives, which may also be non-agricultural. Of the total 120 hours required for graduation in the general curriculum in Agriculture in addition to military science and physical education, forty-seven hours must be in technical agriculture, twenty-six hours of which are in prescribed agricultural courses; twenty-one hours of technical agriculture are to be elected.

The policy of limiting the number of special curricula secures considerable latitude in course selection, but it is not conducive to the selection of desirable course sequences.

A major and specific function of the staff of the College of Agriculture is research, because, as a rule, members of the Agricultural College staff are also members of the Experiment Station staff.

The function of extension is performed, for the most part, by a separate staff. Although only five individuals are specifically employed for both extension and teaching, the Extension staff is assisted in this activity to an important extent, both directly and indirectly, by the College-Station staff. During the calendar year of 1938 twenty-nine agricultural short courses and conferences with a total attendance of 17,387 were held at Urbana. In

addition, numerous conferences, schools, and other meetings are held away from the University.

The employment of the teaching staff in research, and the contact of the teaching staff with extension, although they reduce the time available for teaching, are obviously advantageous to the College and to the agricultural public.

A function of the Agricultural College staff which, in certain departments especially, is time-consuming, is the supervision and management of the equipment, including farms, machinery, herds, orchards, and greenhouses, used in agricultural teaching and research.

Major work for the degree of Doctor of Philosophy is offered by the Departments of Agronomy, Animal Husbandry, Dairy Husbandry, and Horticulture, and for the degree of Master of Science by Agricultural Economics and Home Economics.

Undergraduates in the College of Agriculture who are interested in the technical curriculum in Agricultural Engineering may secure two Bachelor of Science degrees in five years, one in Agriculture and one in Agricultural Engineering, if they will carefully schedule the required courses of study in the two curricula.

Courses in technical agriculture are primarily for the purpose of departmental specialization and technical training.

Course offerings at undergraduate, advanced undergraduate and graduate, and graduate levels by all departments are summarized as follows:

TABLE IX. SUMMARY OF COURSES

College of Agriculture

Department*	Undergraduate		Advanced Undergraduate and Graduate		Total Undergraduate		Graduate	
	Number	Hours	Number	Hours	Number	Hours	Number	Units
Agricultural Administration	2	5			2	5		
Agricultural Economics	6	22	15	42	21	64	11	10.5
Agricultural Engineering	16	50			16	50		
Agronomy	8	32	12	38	20	70	8	12
Animal Husbandry	13	48	13	43	26	91	8	8
Dairy Husbandry	17	51	8	26	25	77	8	15
Home Economics	24	73	17	47	41	120	7	9
Horticulture	24	80	6	19	30	99	10	13
TOTAL	110	361	71	215	181	576	52	67.5

* The newly created Department of Forestry, which offers one 3-hour course, has not been included.

The College of Agriculture makes an invariable practice of submitting to its Committee on Courses and Curricula all proposed new courses, all changes in title and all major changes in the subject matter of existing courses, all changes in existing curricula, and all proposed new curricula. Changes approved by this committee are submitted to the Agricultural College Faculty, which may approve them, reject them, or recommend amendments. This faculty meets at bi-weekly intervals for this and other more or less similar purposes.

All departments have committees which study educational matters, including courses and course relationships, as they concern individual departments; in the smaller departments and in divisions the entire staff may constitute the committee.

The Committee on Courses and Curricula has not confined its activities to a study of proposed changes, but at various times has taken the lead in, and sometimes initiated, various educational studies. In 1920-21 it initiated a change of five-hour courses to three-hour courses. Although the principal purpose of this change was to relieve difficulties in scheduling, condensation and revision of subject matter resulted.

In a series of weekly meetings in 1927-28 this committee reviewed newly-revised outlines of all Agricultural College courses. The objects were to evaluate courses, to reduce duplication, and to exclude unimportant material.

Throughout 1932-33 and 1933-34 this committee met, usually at weekly intervals, for the study of educational methods and theory. The committee was assisted in this study, and especially in the study of pertinent educational research, by Dean Benner and Dr. C. R. Griffith, of the College of Education. Toward the end of the second year the results of this study were presented to the Agricultural College staff and discussed in a series of meetings. Talks and discussions during these meetings have materially affected the policy of the College.

The Program Committee of the College faculty also has been active, especially during the current year, in promoting faculty discussions of educational matters. So far this year, there have been five such meetings of the faculty, and further discussions are planned for the remainder of the semester. At these meetings, speakers have demonstrated or discussed teaching in Agricultural Engineering, Dairy Production, Home Economics and Agronomy. The extended experiments and studies now under way in connection with the teaching of Agronomy 25 have been described. (Subdivisions in this inclusive study by the staff of the Agronomy Department, assisted by Dr. C. W. Sanford and Dr. E. F. Potthoff, of the College of Education, are (1) mental level of students, (2) relation of subject matter to objectives, (3) methods of presentation, (4) methods of measuring results, and (5) physical equipment required for laboratory presentation.[1]

As one means of determining the needs of undergraduate students, the Administrative staff of the College has listed the vocations of graduates and plans to repeat this study in the near future.

TABLE X. OFFERING OF COURSES

Department	Offered Regularly %	Offered Alternately %	Offered Irregularly %	Not Given %
Agricultural Administration	100			
Agricultural Economics	85		15	
Agricultural Engineering	88		12	
Agronomy	78	14	8	
Animal Husbandry	100			
Dairy Husbandry	97	3		
Forestry	100			
Home Economics	75		19	6
Horticulture	63	3	19	13

1 A report of the 1937-38 study can be obtained through the Agronomy Department.

COLLEGE OF EDUCATION

The function of the College of Education is to provide professional training for teachers, supervisors and administrators in the general fields of elementary, secondary and higher education and in the special fields of agricultural and industrial education on both the undergraduate and graduate levels. The College of Education also provides students of other colleges and departments the opportunity to extend their choices into distinctly liberal and cultural fields, especially courses 2, 5, 11, 15, 18, 30, 31, and 55.

TABLE XI. SUMMARY OF COURSES

College of Education

Division and Classification	Total Courses	Net Total Hours
General		
Undergraduate	7	19
Advanced and Graduate	12	29
Graduate (campus)	39	39 units*
Graduate (extramural)	10	10 units
Educational Practice	27	133
Agricultural Education		
Undergraduate	4	9
Industrial Education		
Undergraduate (campus)	5	18
Undergraduate (extramural)	9	27
Advanced and graduate	4	10
Total		
Undergraduate	68	245
Graduate	49	49 units
Grand Total	117	441

* One unit = 4 semester hours.

Courses and Programs of Study

For both Agricultural Education and Industrial Education there is a "suggested curriculum" and the sequence Psychology 1, Education 25, 6, 10 and Educational Practice defines a program of study outside of these indicated programs of study. General courses have a prerequisite of Education 25, but the proportion of terminal courses at the first level is large. (See Chapter

III-D). Hence, the undergraduate courses offered in the College of Education are only partially organized with reference to a program of study. The sequences of courses that are prescribed are based on needed content and are rather rigidly administered.

With the exception of Educational Practice and a few other courses, principally at the graduate level, the courses are described as introductory within a special area of knowledge. The courses listed are given regularly except in a few cases where a course was created for a visiting professor. The registration is homogeneous in 70 per cent of the courses, relatively homogeneous in 20 per cent, and heterogeneous in 10 per cent. Outside of the sequence 25, 10, 6, and Educational Practice, the articulation of courses is left to individual instructors. No courses are considered to fulfill an integrating or summarizing function.

Development and Policy

New courses have been added largely on the basis of the developing needs of teachers, supervisors and administrators. The content of new courses and the revision of existing courses are left largely to individual instructors. The sequence Education 25, 6, and 10 has been examined from time to time by the instructors involved or by a committee for the purpose of improving the selection of content and the articulation of the sequence. Until the current year there has been no curriculum committee or other formal provision for appraising the listed offerings and the indicated programs of study or for planning more coordinated and effective courses.

COLLEGE OF FINE AND APPLIED ARTS

General Functions

The College of Fine and Applied Arts is composed of four major departments, offering a total of thirteen curricula or options leading to the baccalaureate degree, as indicated in Table XII:

TABLE XII. CURRICULA AND DEGREES

College of Fine and Applied Arts

Department	Curriculum or Option	Degree
Architecture	General (Design) Option	B.S., Architecture
	Construction Option	B.S., Arch. Eng'g
Art	Painting	B.F.A., Painting
	Art Education	B.F.A., Art Educ.
	Commercial Design	B.F.A., Comm. Des.
	Industrial Design	B.F.A., Ind. Des.
Landscape Architecture	General Option	B.F.A., Land. Arch.
	City Planning Option	B.F.A., City Planning
Music	Instrumental Major	B.M.
	Voice Major	B.M.
	Theory Major	B.M.
	Band and Orchestra Major	B.M.
	Music Education	B.S. Mus. Educ.

The primary function of the College is to provide professional training in those fields designated by the curricula and options. Other functions of the departments of the College are to provide instruction in subjects required in certain curricula of other departments of the college and also to offer courses designed primarily as general appreciation and survey courses of a non-professional nature.

An analysis of the registration and teaching loads with respect to the three classifications of functional objectives described above is given in Table XIII:

TABLE XIII. REGISTRATIONS AND TEACHING LOADS

IN INSTRUCTIONAL UNITS

(Data for II Semester 1937-38 and I Semester 1938-39)

Department	Departmental Students		FAA Students in other FAA Depts.		Students Other Colleges		Dept. Totals	
	No. Reg.	No. I.U.	No. Reg.	No. I.U.	No. Reg.	No. I.U.	Number Registrations (% FAA Tot.)	Number Instn.Unit (% FAA Tot.)
Architecture	1231	3524 (85%)	192	550	18	62	1441 (24%)	4136 (27.5%)
Art	813	2572 (51%)	602	1255	559	1158	1974 (32%)	4985 (33%)
Landscape Architecture	238	705 (73%)	8	18	94	241	340 (6%)	964 (6.5%)
Music	1870	4131 (83%)	7	15	421	847	2298 (38%)	4993 (33%)
TOTALS	4152	10932	809	1838	1092	2308	6053	15078
% OF TOTAL	68.5%	72.5%	13.5%	12.2%	18.0%	15.3%	100%	100%

Seventy-two and one-half per cent of the total teaching load in the College of Fine and Applied Arts is expended in departmental specialization; 12.2% is inter-departmental service teaching and 15.3% is extra-college service teaching. The total service teaching loads by departments is:

Architecture	15% of dept. instr. units.
Art	49% of dept. instr. units.
Landscape Architecture	27% of dept. instr. units.
Music	17% of dept. instr. units.

Since 42% of the total semester hour offerings and 50% of the clock-hour registration in the College of Fine and Applied Arts are administered as Drawing-Room, Studio and Lecture-Drawing Room type of instruction, a summary showing the actual clock-hour registration loads is an important analysis for this particular College. Such an analysis is shown in Table XIV.

TABLE XIV. TYPE OF INSTRUCTION AND TEACHING LOADS

IN CLOCK-HOUR REGISTRATION UNITS

Data for II Semester 1937-38 and I Semester 1938-39

Department	Actual Clock Hour Teaching Units			Total	Instructional Staff	
	Lecture-Recitation	Drawing Rm. Stud.	Individual Instruction		No.Full Time	Av.Cl.Hr. Units Wk.
Architecture	1662	7695	0	9357	17.75	525
Art	956	12087	0	13043	14.25	915
Landscape Architecture	472	1476	0	1948	4.90	398
Music	2091	184	588	16387*	22.33	733*
TOTALS	5181	21442	588		Average Cl.Hr.Load	643

*For purposes of a comparison one hour of individual instruction is assumed equivalent to one hour of lecture or recitation for a class of 24 which is the average number of music students in all lecture recitation courses in music exclusive of Music 13 and 14.

Curricula and Courses, Educational Programs

The primary function of each of the departments of the College necessitates curricula of relatively fixed sequences of subjects. The requirements in each of the thirteen curricula with respect to departmental specialization, other specified courses and elective credits are summarized in Table XV.

TABLE XV. DISTRIBUTION OF SEMESTER HOUR REQUIREMENTS FOR DEGREES.

	Dept. Cr. Hours	Specified Credit in Other Colleges and Other Departments of F. A. A.							Elective*	P.E. Mil. Hyg.	Total
		Other FAA Depts.	Eng.	Com.	Jour.	Agr.	Ed.	L.A.S.			
ARCHITECTURE											
Gen. Option	68	18	23	-	-	-	-	23	2	8	142
Const.Option	55	8	30	-	-	-	-	23	18	8	142
ART											
Painting	80	6	-	-	-	-	-	20	16	8	130
Art Educ.	53	6	-	-	-	-	14	18	31	8	130
Com.Design	64	6	-	6	6	-	-	14	26	8	130
Indus.Design	68	6	-	9	-	-	-	14	25	8	130
LANDSCAPE ARCH.											
Gen.Option	59	22	10	-	-	3	-	21	7	8	130
City Plan	42	18	16	6	2	-	-	27	11	8	130
MUSIC											
Instrum.	100	-	-	-	-	-	-	17	5	8	130
Voice	97	-	-	-	-	-	-	22	3	8	130
Theory	105	-	-	-	-	-	-	17	-	8	130
Band & Orch.	97	-	-	-	-	-	-	17	8	8	130
Music Educ.	72	-	-	-	-	-	14	18	18	8	130

*Electives given for men. Women in all curricula have two more hours of elective than men.

TABLE XVI. SUMMARY OF COURSES BY SEMESTER HOUR CREDIT AND TYPE OF INSTRUCTION

DEPARTMENT Type of Instruction	SEMESTER HOUR CREDIT								Total Courses	Total Cr. Hours	Net Total Cr.Hrs.
	½	1	2	2½	3	4	5	7			
ARCHITECTURE*											
I. Lecture-Recitation		3	9		4				16	33	24
II. Drawing Room			2		4		2	2	10	40	36
III. Combination I & II					7		2		9	31	25
ART											
I. Lecture-Recitation			8		2				10	22	16
II. Drawing Room Studio			31		14		10		55	154	130
III. Combination I & II					3		2		5	19	19
LANDSCAPE ARCHITECTURE											
I. Lecture-Recitation		1	4		3				8	18	13
II. Drawing Room					4	2	2		8	30	30
III. Combination I & II					8				8	24	24
MUSIC											
I. Lecture-Recitation		8	29		8	6			51	114	110
II. Studio Class	4		6						10	14	14
III. Individual Instruction			28	20	9	18	8		83	245	147
TOTALS*	4	12	117	20	66	26	26	2	273	744	588

*These figures do not include 5 graduate courses in Architecture with 8.6 units credit.

TABLE XVII. RECAPITULATION SHOWING NUMBER OF COURSES AND NUMBER OF CREDIT HOURS FOR EACH TYPE OF INSTRUCTION AND PERCENTAGES.

Type of Instruction	Number of Courses (% Total)	Number of Credit Hours (% Total)
I. Lecture-Recitation	85 (31%)	187 (25%)
II. Drawing Room, Studio	83 (30½%)	238 (32%)
III. Combination of I & II	22 (8%)	74 (10%)
IV. Individual Instruction	83 (30½%)	245 (33%)

TABLE XVIII. HOMOGENEITY OF REGISTRATION.

Department	NUMBER OF COURSES AND NUMBER OF SEMESTER CREDIT HOURS IN WHICH REGISTRATION IS:			Number of General Appreciation Courses
	Homogeneous	Relatively Homogeneous	Heterogeneous	
ARCHITECTURE				
No. Courses	27	6	3	2
No. Cr. Hours	82	16	6	
% of Total	(79%)	(15%)	(6%)	
ART				
No. Courses	52	4	14	8
No. Cr. Hours	151	14	30	
% of Total	(78%)	(7%)	(15%)	
LANDSCAPE ARCH.				
No. Courses	17	2	5	
No. Cr. Hours	54	4	14	5
% of Total	(75%)	(6%)	(19%)	
MUSIC				
No. Courses	53	80	11	
No. Cr. Hours	165	189	19	6
% of Total	(44%)	(51%)	(5%)	

Heterogeneous registration results from two principal causes: (1) students from other colleges in the 21 general appreciation courses given by the four departments of the college, and (2) transfer students from other colleges who have no transfer credit in sequential courses of departmental specialization. The number of registrations involved in the first group is approximately equal to that of the second group.

TABLE XIX. REGULARITY OF COURSE OFFERINGS.

Department	Number of Courses Offered Regularly (% Total)	Number of Courses Offered Irregularly (% Total)	Remarks Concerning Courses Offered Irregularly
Architecture	35 (100%)		
Art	66 (94%)	4 (6%)	Art 52a, 52b, Adv. Modeling. Art 43a 43b Adv. Land. Ptg. Only Occasional Students.
Landscape Architecture	24 (100%)		
Music	136 (94%)	8 (6%)	Mus. 11a,11b,12a, 12b,27,37, Mus. 17, 18 (Theory courses) Only occasional students.
TOTALS	261 (95½%)	12 (4½%)	

TABLE XX. CLASSIFICATION OF COURSES BY PURPOSE. QUANTITIES

( ) GIVE SUM OF SEMESTER HOURS CREDIT.

Educational Purpose of Course	DEPARTMENT							
	Architecture		Art		Landscape Architecture		Music	
	Elem.	Adv.	Elem.	Adv.	Elem.	Adv.	Elem.	Adv.
Departmental Specialization	7 (19)	22 (69)	8 (28)	37 (117)	6 (18)	16 (49)	63 (158)	61 (175)
Service Courses For other Departments	6 (16)		6 (12)	7 (16)	1 (3)	2 (6)		4 (9)
Elective for Dept. Majors			6 (12)	10 (22)				8 (22)
Elective Primarily for Other Colleges	2 (6)		2 (6)		1 (3)		22 (44)	
Departmental Courses Frequently taken by students in other colleges			8 (16)	4 (8)	1 (3)	3 (7)	8 (18)	

The total number of courses shown in the above table is greater than the actual number as given in Table XVI, since 26 courses in the first four divisions serve dual purposes. All courses in the last division are duplications.

Educational Program

Each of the thirteen curricula in the College of Fine and Applied Arts is definitely outlined and the sequences of courses specified. Definitely specified work varies from 76% of the total requirements in the Art Education curriculum to 100% in the Theory Major curriculum in Music. The analysis of the credit hour requirements is shown in detail for each of the thirteen curricula in Table XV.

The specifications of prerequisites for sequences of departmental courses, throughout the four departments of the college, are based upon the necessary content of preceding courses. The administration of course sequences is rigid and an effective articulation of sequential courses prevails.

Departmental Policies of Development

With the organization of the College of Fine and Applied Arts in 1931, the Department of Art and Design previously existing as a minor service department in the College of Liberal Arts and Sciences, was taken over and remodeled into a degree-granting Department of Art with a curriculum in Painting. Since 1931-32 three additional curricula have been added in the Department of Art (Art Education, Commercial Design and Industrial Design) and one curriculum has been added in the School of Music (Music Education).

Fifty-five new courses have been added in the various departments of the College of Fine and Applied Arts in eight years of the College's existence (1931-1939). The purposes for which the new courses have been added are shown in the following table.

TABLE XXI. NEW COURSES ADDED DURING PERIOD 1932-1938.

Purpose for Which New Courses Have Been Added	DEPARTMENT							
	Architecture		Art		Landscape Architecture		Music	
	Elem.	Adv.	Elem.	Adv.	Elem.	Adv.	Elem.	Adv.
Service Courses for other Departments	2 (6)		4 (8)	4 (8)				
Electives for Departmental Majors				6 (12)				2 (4)
To improve existing Curricula	1 (2)				3 (9)			2 (6)
To Provide for new Curricula				15 (53)			4 (8)	
To extend undergraduate work for Applied Music majors								12 (48)

Note: ( ) indicates total credit hours of courses.

Each of the thirteen curricula in the College has been subjected to examination and study within the past eight years, and a number of changes have been made in each, in an effort to improve articulation of subject matter and otherwise to improve the programs of study.

No study has been made to determine the feasibility or desirability of eliminating obsolete material or reducing the number of courses in any curriculum. The trend, to date, in all curricula has been to increase the number of required departmental courses, thereby reducing the possible elective courses.

Thus, in the past eight years electives have been reduced as follows:

Three in the General Option in Architecture

One in the Construction Option in Architecture

Ten in the Painting Curriculum

Seven in the Landscape Architecture Curriculum

Eight in the Instrumental curricula in Music.

Two in the Voice Curriculum in Music.

In no curriculum has the number of elective credits been increased.

Appraisals of courses and curricula and recommendations for changes and revisions are inaugurated by a committee within the department concerned and transmitted to the Executive Committee of the College for approval and recommended to the faculty.

SCHOOL OF JOURNALISM

The general function of the School of Journalism is to provide professional journalistic training integrated with a broad educational background. Incidental to this general function, the School of Journalism also provides (a) courses primarily as a service to other departments (e.g. Journalism 3), (b) courses designed for professional research (e.g. Journalism 39, 40, 60), (c) teacher training (Journalism 47). Several courses, in addition to contributing toward professional training, are intended to have a distinct cultural or general function (e.g. Journalism 35, 36).

TABLE XXII. SUMMARY OF COURSES

School of Journalism

	Courses	Net Total Hours
Undergraduate	10	19*
Advanced Undergraduate	31	77*
TOTAL	41	96

* Courses withdrawn in 1938--Journalism 7, 8, 9b--are not included.
**Courses withdrawn in 1938--Journalism 22, 28, S37, S42, 48, 56, S57--are not included.

Courses and Programs of Study

Eighty-nine per cent of the courses are given regularly. The registration is homogeneous or relatively homogeneous in all but three courses. One course, Journalism 3, is a general survey for non-professional students. Ten courses are reported as having a "sumarizing and/or integrating function."

The School of Journalism offers three programs of study: (1) News and Editorial (general); (2) Advertising and Publishing Curriculum; (3) Special and Critical Curriculum. Approximately 50 per cent of the students undertake the first, 45 per cent the second and 5 per cent the third. Each of these curricula requires 30 hours in journalism and electives from certain fields approved by the School of Journalism.

Journalism 5 and Journalism 6 are prerequisites for most courses, but there is little additional specification of course sequence.

Departmental Policy

A definite attempt has been made to meet the needs of students, both by making changes in existing courses and by introducing new courses. In general, the content of courses is revised rather frequently. Journalism 35 and 36 are completely revised every semester. Journalism 9 remains fairly constant. Revision is left largely to the instructor in cooperation with the head of the department. Last year, under the direction of the Curriculum Committee, all three curricula were revised, both as to courses and content of courses. As a result of this revision, nine courses were abandoned.

COLLEGE OF LAW

The function of the College of Law is primarily the training of students for the practice of law. It is, therefore, definitely a professional school.

Courses and Programs of Study

Fifty-eight courses are offered, for which the credit totals 135 semester hours. All but seven of these courses are offered regularly. Three courses are offered in alternate years and four are offered irregularly. The registration tends to be homogeneous, especially in the courses required of first-year students.

Beyond the establishment of a required first-year program, the College of Law has created neither prescribed or optional curricula nor programs of study. Only a small number of courses have stated prerequisites, but students are advised with reference to the sequence of courses in the second and third years. As a result, it is the custom for students to take certain courses in their second year and certain other courses in their third year.

The articulation of sequential courses presents no serious problems. The content of the various law courses is rather well established, both by customary law school practice and by considerations of practical necessity. In cases where the relationship of courses is particularly close, both courses are usually taught by the same instructor and the entire problem of course relationship is the subject of occasional consideration by the faculty as a whole.

Departmental Policy

Changes in the content of a course are, in a large measure, left to the instructor offering it, who is expected to be aware of the developments in his field and to revise his courses as professional need may require. The faculty has in practice exercised the power to determine what courses shall be offered and the allocation of credit hours to the particular courses. By elimination of existing courses, by combining courses, by dividing courses,

and by altering the allocation of credit hours, etc., the faculty may, of course, force revisions of content. Faculty revision of this sort is made from time to time as occasion may seem to require. Minor changes of one kind or another occur perhaps yearly. More extensive revisions may occur at intervals of four or five years. Although there is no standing committee on the curriculum, such a committee functions a considerable portion of the time. A rather substantial curriculum revision occurred two years ago and the problem is now again under consideration by a committee of the College.

SCHOOL OF PHYSICAL EDUCATION

General Functions

The School of Physical Education includes the departments of Health Service, Physical Education for Men, and Physical Education for Women. The function of the department of Health Service is to provide health instruction and to contribute to the maintenance of healthful living conditions. The functions of the departments of Physical Education for Men and Physical Education for Women are as follows:

1. Training
   a. Teachers of physical education
   b. Coaches of athletics
   c. Recreational leaders

2. Conducting courses in physical education for all students
   a. Directing students in learning to perform sports according to social and hygienic standards
   b. Directing students in the development of desirable attitudes and appreciation of sports
      (1) To appreciate the value of sports as a leisure time activity while in the University
      (2) To appreciate the value of sports as one means of using leisure time after graduation from college

3. Promoting a general program in recreational sports and healthful living for all students.

TABLE XXIII. SUMMARY OF COURSES

School of Physical Education

Departments	Total Courses		Net Total Hours	
Physical Education for Men				
Professional Courses	23		54.0*	
Service Courses	32		16.5	
TOTAL		55		70.5
Physical Education for Women				
Professional Courses	25		57.0	
Service Courses	19		19.0	
TOTAL		44		76.0
Health Service		3		6.0
GRAND TOTAL		102		152.5

*Includes two courses (4 hours each) taken primarily by graduates

Courses and Programs of Study

The service courses in Physical Education for Men and Physical Education for Women, and Hygiene 5 (men) and Hygiene 2 (women) are primarily for general education, introductory (except 4 in P. E. M. and 5 in P. E. W.), and homogeneous in registration (except in P. E. W., where heterogeneity is not considered undesirable.)

The professional courses are largely introductory (19 out or 23 in P. E. M. and 16 out of 25 in P. E. W.). The non-introductory courses are described as "summarizing and integrating."

Hygiene 10 is a further development of Hygiene 2 or 5, and is designed for teachers of hygiene. The registration in this course is heterogeneous.

All courses are offered regularly except when an instructor is on leave for a semester.

Programs of professional study are in terms of a prescribed curriculum for men and one for women. There are few course prerequisites, the sequence of courses being specified by the curriculum. The departmental programs for professional courses are adhered to rather closely, 40 hours being required for women out of 57 offered and 40 hours being required for men out of the 46 designed for undergraduates.

Development and Policy

In both Physical Education for Men and Physical Education for Women, the number of courses has been materially increased during recent years, especially since the establishment of the School of Physical Education in 1932. In Health Service, no courses have been added during the past 15 years.

Both Physical Education for Men and Physical Education for Women have a Committee on Curriculum. These committees hold frequent meetings and suggested changes are considered by the respective staffs. In Physical Education for Men and Health Service, courses are examined each year with reference to possible improvement.

LIBRARY SCHOOL

With the exception of Library Science 12, General Reference, which is designed as a general service course for freshmen and sophomores, the courses offered are professional in character.

TABLE XXIV. SUMMARY OF COURSES

Library School

Classification	Total Courses	Net Total Hours
Professional	19*	50
Graduate Professional	20	16 (u)
TOTAL	39	114

*Does not include Inspection Trip (No. 99) for which no credit is offered.

Courses and Program of Study

In general, the courses below the graduate level are introductory in character but at a professional fifth-year level. Slightly more than one-third are further developments of such courses. The graduate courses are advanced study in the same fields, or courses at an advanced level in additional subjects. Library Science 102g, Social Trends, involves application of knowledge from other fields. The Inspection Trip (No. 99) and two courses offered in Summer Sessions fulfill an integrative function. Some cases of intra-departmental overlapping were reported, but a portion of this is due to the development of a new course which will probably result in the discontinuance of two courses now listed. The overlapping with other departments appears to be inconsequential. With the exception of courses offered only in summer sessions and courses beyond the first-year curriculum, the courses are offered regularly or alternately. The registration tends to be homogeneous

The departmental program of study is expressed in terms of a curriculum for the B. S. in Library Science and one for the Master's degree; the administration of these prescriptions is on the whole flexible. Course sequences are based on needed content and the articulation of courses is reported as

satisfactory.

Development and Policy

A few courses have been added during the past ten years; (a) to provide for well-defined professional needs; (b) to provide greater opportunity for specialization; (c) to meet demands of students during summer sessions. Both a committee and the staff have given attention to curriculum revision during the past three years. The content of particular courses is left to the initiative of the instructors and revision is constantly going on.

CHAPTER III

GENERAL SUMMARY AND COMMENTS

This chapter reports studies of five general aspects of courses and curricula. In addition to reporting information, the Committee has attempted to indicate its evaluation and interpretation.

A. Number of Courses and Curricula

Table XXV gives the number of courses and the net total hours[1] listed in the several departments, and a summary by colleges and schools. In both cases, there have been added data for staff (measured in terms of full-time instructors, obtained by subtracting time devoted to research, administration, and other activities), and instructional service (measured in terms of instructional units, obtained for a given course by multiplying the registration by the credit hours).

The total number of courses, 2,277, and the net total hours, 6848.5, are large. Even in the case of many of the departments, these items are large. Furthermore, the number of courses and hours of work is still increasing. During 1936-1937, 94 new courses were added, and during 1937-1938, 70 additional courses were approved. For these years, only 18 courses were dropped or replaced as a result of the new courses approved.[2] Hence, in the

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1 The "net total hours" was found by subtracting from the "total hours" the number of hours in courses for which a student may not receive credit if he has taken other courses; e.g., a student with credit in Bacteriology 5a-5b is not allowed credit in Bacteriology 20. In case the credits for such mutually exclusive courses are not equal, the smaller number of semester hours was subtracted from the larger. In most cases mutually exclusive courses are in the same department. One exception occurs in the department of Engineering.

In combining semester hours and units of graduate credit, one unit was taken as equivalent to four semester hours.

2 These data were obtained from the Bureau of Institutional Research.

TABLE XXV
Departmental Course Offerings (courses, net hours)
Departmental Staff (full-time instructors)
Departmental Service (instructional units)

Department	Course Offerings							Staff Full-time %	Service Instruc. Units %
	Undergrad.		Graduate		Grand Total				
	No.	Hrs.	No.	Unit	No.	Hrs.	Hrs. %		
1	2	3	4	5	6	7	8	9	10
Astronomy	5	15	3	2	8	23	.33	.13	.05
Bacteriology	8	21	3	5	11	41	.60	.90	1.01
Botany	30	89	18	13	48	141	2.06	1.53	1.18
Chemistry	58	135	41	28.75	99	250	3.65	9.26	8.23
Classics	34	92	18	18	52	164	2.39	.56	.31
English	80	222	45	48	125	414	6.05	11.47	12.02
Entomology	16	55	1	2	17	63	.92	.64	.50
Geology	19	51	13	18	32	123	1.80	1.49	1.69
Geography	17	45.5	2	4	19	61.5	.90	.89	1.26
German	26	69	9	18	35	141	2.06	1.75	2.23
History	72	196	28	28	100	308	4.50	2.17	3.59
Mathematics	33	86	39	39	72	242	3.53	5.05	6.08
Philosophy	17	51	10	10	27	91	1.33	.78	.81
Physiology	9	38	3	2.75	12	49	.72	1.03	1.23
Poli. Sci.	21	54	14	14	35	110	1.61	1.48	2.19
Psychology	24	61	10	9.5	34	99	1.45	1.65	2.81
Rom. Lang.	55	145	31	31	86	269	3.93	3.74	4.58
Sociology	21	61	13	13	34	113	1.65	.96	1.42
Zoology	28	108	16	16	44	172	2.51	2.59	1.98
Engineering	3	3	--	--	3	3	.04	--	--
Ceramics	19	52	9	9	28	88	1.28	.80	.48
Civil	42	94	22	23	64	186	2.72	2.05	1.49
Electrical	37	70	14	17.5	51	140	2.04	2.12	1.29
G. E. D.	8	17	--	--	8	17	.25	1.68	1.51
Mechanical	32	97	6	6.5	38	123	1.80	3.58	2.23
Min. & Met.	33	82	8	8	41	114	1.66	.49	.30
Physics	34	72.5	31	36	65	216.5	3.16	3.76	2.74
Railway	26	64	6	6	32	88	1.28	.39	.14
T. & A. M.	14	31	14	12	28	79	1.15	1.96	1.57
Agri.Adm.	2	5	--	--	2	5	.07	.02	.03
Agri. Econ.	21	64	11	10.5	32	106	1.55	.71	.82
Agri. Eng'g	16	50	--	--	16	50	.73	.30	.49
Agronomy	20	70	8	12	28	118	1.72	.97	.92
Animal Husb.	26	91	8	8	34	123	1.80	.87	1.01
Dairy Husb.	25	77	8	15	33	137	2.00	.89	.54
Home Econ.	41	120	7	9	48	156	2.28	2.15	1.65
Horticul.	30	99	10	13	40	151	2.20	.68	.41

TABLE XXV
(continued)

Department	Course Offerings: Undergrad. No.	Undergrad. Hrs.	Graduate No.	Graduate Unit	Grand Total No.	Grand Total Hrs.	Grand Total Hrs. %	Staff Full-time %	Service Instruc. Units %
1	2	3	4	5	6	7	8	9	10
B. O. & O.	50	127	20	20	70	207	3.02	4.76	6.32
Economics	54	158	37	37	91	306	4.47	3.96	5.70
Architecture	35	85	5	8.5	40	119	1.74	2.28	1.13
Art	70	165	--	--	70	165	2.41	1.83	1.31
Land. Arch.	24	67	--	--	24	67	.98	.63	.24
Music	144	271	--	--	144	271	3.96	2.87	1.26
P.E.M.	55	70.5	--	--	55	70.5	1.03	2.16	2.03
P.E.W.	44	76	--	--	44	76	1.11	1.33	1.19
Hygiene	3	6	--	--	3	6	.09	.80	1.85
Education	68	245	49	49	117	441	6.44	4.04	3.97
Journalism	41	96	--	--	41	96	1.40	1.03	1.13
Law	58	135	--	--	58	135	1.97	1.25	2.06
Library Sci.	19	50	20	16	39	114	1.66	1.59	.93
Summary by Colleges and Schools									
L. A. S.	573	1594.5	317	320	890	2874.5	41.99	48.06	53.25
Eng'g	248	582.5	110	118	358	1054.5	15.38	16.82	11.77
Agriculture*	181	576	52	67.5	233	846	12.35	6.59	5.87
Commerce	104	285	57	57	161	513	7.49	8.71	12.00
F. A. A.	273	588	5	8.5	278	622	9.09	7.63	3.95
P. E.	102	152.5	--	--	102	152.5	2.23	4.28	5.07
Education	68	245	49	49	117	441	6.44	4.04	3.97
Journalism	41	96	--	--	41	96	1.40	1.03	1.13
Law	58	135	--	--	58	135	1.97	1.25	2.06
Lib. Sci.	19	50	20	16	39	114	1.66	1.59	.93
TOTAL UNIV.	1667	4304.5	610	636	2277	6848.5	100.00	100.00	100.00

*The newly created Department of Forestry, which offers one 3 hour course, has not been included.

areas involved, there was a net increase of 146 courses during this two-year period. Some courses were probably dropped that were not referred to in the proposals for new courses, especially in departments not petitioning for new courses. The number of such courses was not ascertained, but it seems reasonable to estimate that the total net increase during the two-year period was not less than 100 courses. The number of new courses approved decreased from 94 in 1936-1937 to 70 in 1937-1938. The information for the current year indicates a further decrease in the annual increment of new courses, but unless there is a distinct change in policy, we may expect the total number of courses to increase for several years. A year hence, it will probably be in excess of 2,300. One may only speculate in regard to what it will be ten years hence. Should these findings be pointed to with pride, or should they be regarded as indicating a condition about which we should be concerned?

Additional evidence of the range and diversity of the educational program of the University is furnished by the number of undergraduate curricula and options. In computing the number of curricula, a major as defined in the College of Liberal Arts and Sciences and in the College of Education, may be regarded as a curriculum although the prescription is in number of hours rather than in terms of particular courses. Table XXVI shows the number of curricula and options leading to the bachelor's degree in the several divisions of the University. In addition, there are five pre-professional curricula in the College of Liberal Arts and Sciences. Again we may raise the question: Should this situation be pointed to with pride, or should it be regarded as indicating a condition about which we should be concerned?

A department represents an area of knowledge. Within a given area, the number of courses listed and also the net total hours depend upon the articulation and coordination of the several courses, the extent to which obsolete or relatively unimportant content has been eliminated through revision, the degree to which details are introduced, and the overlapping with other departments. For example, within a given area, a carefully planned list of offerings

TABLE XXVI

Number of Curricula Leading to a Bachelor's Degree in the Colleges and Schools

Division	Number of Curricula Including Options	Hours Required for Graduation
Liberal Arts and Sciences	25	120
	2	130
Commerce	11	130*
Engineering	24	136
Agriculture	4**	120
Education	27	120
	3	Special
Fine and Applied Arts	2	142*
	11	130*
Physical Education	2	130*
Journalism	3	124
TOTAL	114	

* Includes Physical Education and Military Science and Tactics.
** A curriculum in Dairy Technology has been added.

might total only one hundred hours. On the other hand, lack of careful departmental planning and unrestricted freedom in permitting individual instructors to initiate new courses might result in offerings totaling two hundred hours. The first situation is more likely to contribute to institutional economy and the better education of students.

Table XXVII gives the per cents[3] of undergraduate classes having registrations of 1 to 5, 6 to 10, etc. In examining this table, it should be remembered that individual instruction is required in honors courses, undergraduate thesis courses, most courses in music, and educational practice

3 The per cents are the average of the second semester of 1937-1938 and the first semester of 1938-1939. Data supplied by the Bureau of Institutional Research.

and that in other courses the nature of the work and the available equipment requires relatively small classes. However, it is clear that a number of classes with relatively small registrations are being maintained where these conditions do not apply.

The number of students taking a course should not be used as an index of its value in the educational program of the University. There may be justification for retaining in the list of offerings courses that are taken by relatively few students (say by less than ten on the undergraduate level and by less than five on the graduate level), but small classes are relatively expensive and a large per cent of such classes within a department, where conditions do not require individual instruction or small classes, suggests that the list of offerings might be more wisely planned.

Comparisons between departments should be made with caution, but the findings in Table XXV, supplemented by other data, suggest that some departments have developed a better balanced list of offerings than other departments. Some suggestion toward the identification of the "more efficient departments"[4] is obtained by comparing the per cent of staff listed with the per cent of service (units of instruction[5]), the latter being given in the last column of Table XXV. (See also Charts Ia, Ib, and Ic.) One should not conclude that, in all cases, the "more efficient departments" are those for which the per cent of service is greater than the per cent of staff, and the "less efficient departments" are those for which the per cent of service is less than the per cent of staff. If the presence of elementary courses with large registrations and the nature of the instruction are kept in mind, Table XXV

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4 Aside from any question relative to the content of the courses offered, a "more efficient department" is one in which the courses have been wisely planned with reference to articulation and coordination, and in which the net number of hours of work offered is consistent with the demand for such service.

5 Data for units of instruction represent the average of the second semester of 1937-1938 and the first semester of 1938-1939. Data supplied by the Bureau of Institutional Research.

TABLE XXVII

Distribution in Per Cents of Undergraduate Classes
According to Size
Average of Second Semester 1937-38 and First Semester 1938-39

DEPARTMENT	Class Size							
	1-5	6-10	11-20	21-30	31-40	41-50	51-100	100+
Astronomy	--	50	--	--	--	50	--	--
Bacteriology	--	--	17	50	19	--	10	4
Botany	2	14	34	21	21	3	--	5
Chemistry	5	3	34	48	2	2	2	4
Classics	29	23	29	12	4	--	--	3
English	2	1	9	72	12	--	2	2
Entomology	12	23	14	14	12	23	2	--
Geology	9	2	8	51	22	2	2	4
German	7	6	23	57	7	--	--	--
History	8	4	15	45	11	2	5	10
Mathematics	1	2	19	73	5	--	--	--
Philosophy	10	--	22	41	17	--	2	8
Physiology	5	2	15	14	29	24	1	10
Poli. Science	4	--	9	24	35	11	13	4
Psychology	3	--	6	45	27	5	4	10
Romance Lang.	2	8	27	49	14	--	--	--
Sociology	8	6	14	20	10	24	14	4
Zoology	10	3	28	48	6	--	3	2
TOTAL LAS:	5	4	20	52	11	3	2	3
Ceramic Engineering	23	6	30	30	7	2	2	--
Civil Engineering	3	14	53	29	1	--	--	--
Electrical Engineering	12	20	55	8	3	--	2	--
G. E. D.	3	3	25	69	--	--	--	--
Mechanical Engineering	2	1	14	38	23	13	9	--
Mining and Met.	35	25	24	6	8	2	--	--
Physics	3	13	37	43	--	--	--	4
Railway Engineering	78	7	4	4	--	7	--	--
T. and A. M.	5	18	59	18	--	--	--	--
TOTAL ENG.:	9	12	40	32	4	2	1	1
Agri. Adm.	--	--	--	100	--	--	--	--
Agri. Econ.	10	3	19	46	9	7	3	3
Agri. Engineering	5	--	33	33	15	4	5	5
Agronomy	--	6	15	35	30	4	3	7
Animal Husbandry	5	10	19	29	27	--	5	5
Dairy Husbandry	3	16	25	29	13	1	12	1
Home Economics	3	10	48	20	6	2	10	1
Horticulture	18	17	24	24	17	--	--	--
TOTAL AGRICULTURE:	6	9	32	27	15	2	6	3

TABLE XXVII
(continued)

DEPARTMENT	Class Size							
	1-5	6-10	11-20	21-30	31-40	41-50	51-100	100+
Accountancy	--	1	6	74	15	1	2	--
B. O. and O.	6	1	16	39	29	7	--	2
Business Law	--	2	3	61	31	3	--	--
Economics	2	1	8	62	17	3	1	6
TOTAL COMMERCE:	2	1	8	62	19	3	1	4
Architecture	6	--	39	36	9	3	5	1
Art	25	9	26	14	15	8	3	--
Landscape Arch.	10	28	41	14	7	--	--	--
Music	80	8	7	2	1	1	1	--
TOTAL FAA:	60	8	15	8	5	2	2	--
P. E. M.	19	8	14	25	21	10	3	--
P. E. W.	3	3	25	23	20	14	12	--
Hygiene	--	--	--	1	20	69	10	--
Education	16	15	16	16	20	13	3	1
Journalism	3	14	53	11	4	6	7	2
Law	5	10	10	5	12	12	43	3
Library Science	2	4	13	40	29	10	2	--

and Charts Ia, Ib, and Ic may be utilized as a means of tentative identification. By reference to Table XXVII, it will be noted that there is a high degree of correlation between the proportion of small classes and the degree of departmental "efficiency."

Where the facts suggest the possibility that a department is not highly "efficient" with reference to its list of offerings, this situation should be interpreted as indicating that the department should critically examine its list of offerings in the light of the demand for courses in its area. In this examination, attention should be given to the possibility of new syntheses of content in which obsolete material and subject matter of minor importance for the education of students are eliminated. In Sections D and E of this chapter, attention is called to differences with respect to departmental programs of study, and departmental practices and policies relative to the revision of courses offered. The differences noted in these sections would lead one to expect variations in "departmental efficiency," and although there are doubtless other contributing factors, differences in departmental practices and policies with reference to creating new courses and revising existing courses doubtless have been a potent cause of the conditions suggested by Table XXV and Charts Ia, Ib, and Ic, viz., the differences between the number of hours offered and the proportion of service rendered.

The per cent of instructional staff (Table XXV, Column 9), in combination with the per cent of listed offerings, suggests an index of the University's educational policy with reference to the development and support of a department. In a rough way, the combination of these two measures represents the outlay being made for the education of students within a department, and by comparison with the relative service, we obtain a measure which merits some attention.

These three sets of data are represented graphically in Charts Ia, Ib, and Ic, staff and listed offerings being represented to the left of the vertical line and service to the right. Although comparisons must be made with caution,

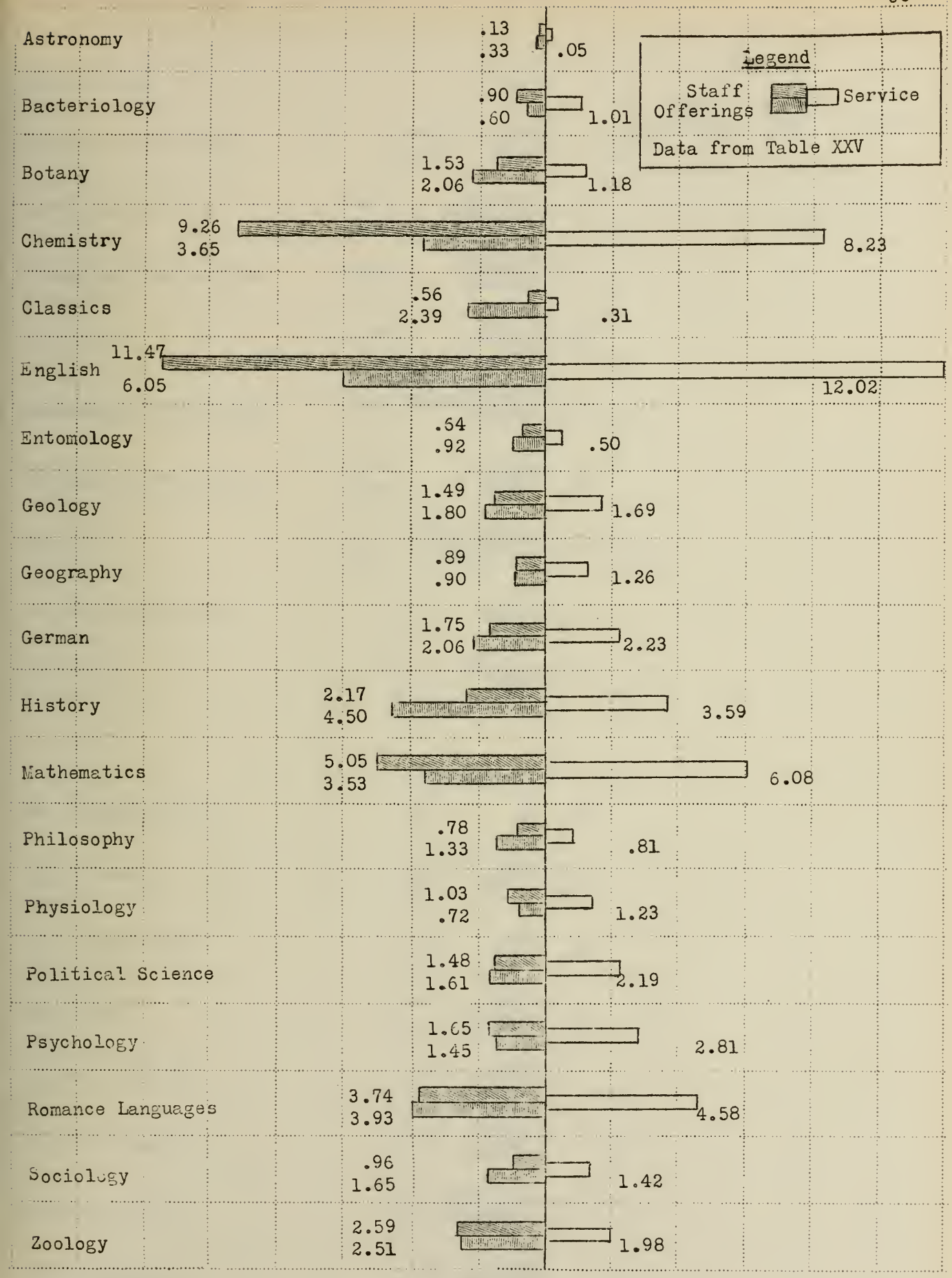


Chart Ia

Chart showing relative departmental course offerings (net hours), departmental staff (full time instructors), and departmental services (instructional units)--based on Table XXV, columns 8, 9, 10.

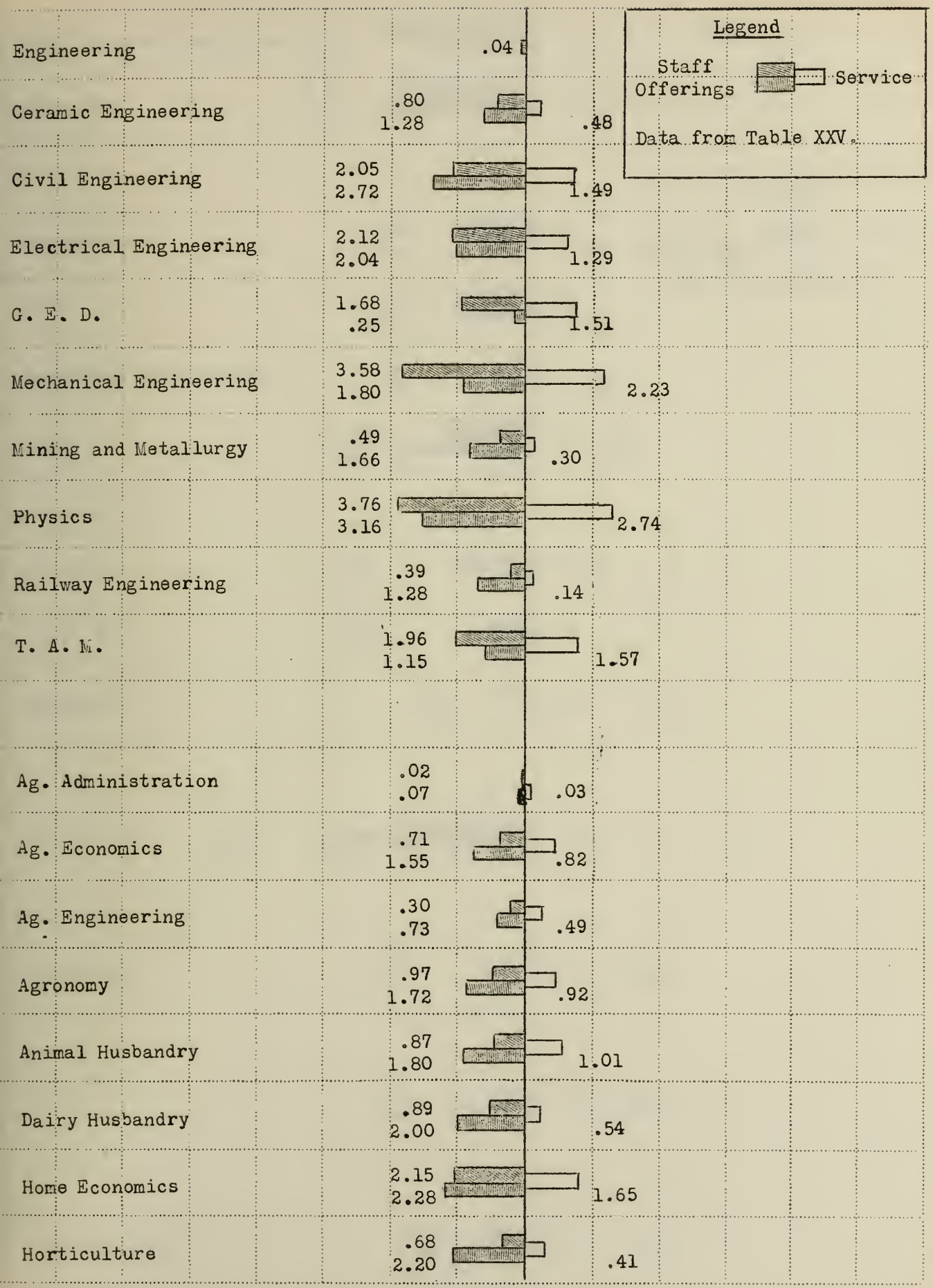
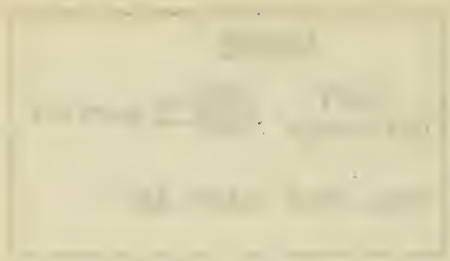

Legend
Staff Offerings
Service
Data from Table XXV.
Engineering
.04
Ceramic Engineering
.80
1.28
.48
Civil Engineering
2.05
2.72
1.49
Electrical Engineering
2.12
2.04
1.29
G. E. D.
1.68
.25
1.51
Mechanical Engineering
3.58
1.80
2.23
Mining and Metallurgy
.49
1.66
.30
Physics
3.76
3.16
2.74
Railway Engineering
.39
1.28
.14
T. A. M.
1.96
1.15
1.57
Ag. Administration
.02
.07
.03
Ag. Economics
.71
1.55
.82
Ag. Engineering
.30
.73
.49
Agronomy
.97
1.72
.92
Animal Husbandry
.87
1.80
1.01
Dairy Husbandry
.89
2.00
.54
Home Economics
2.15
2.28
1.65
Horticulture
.68
2.20
.41

Chart Ib



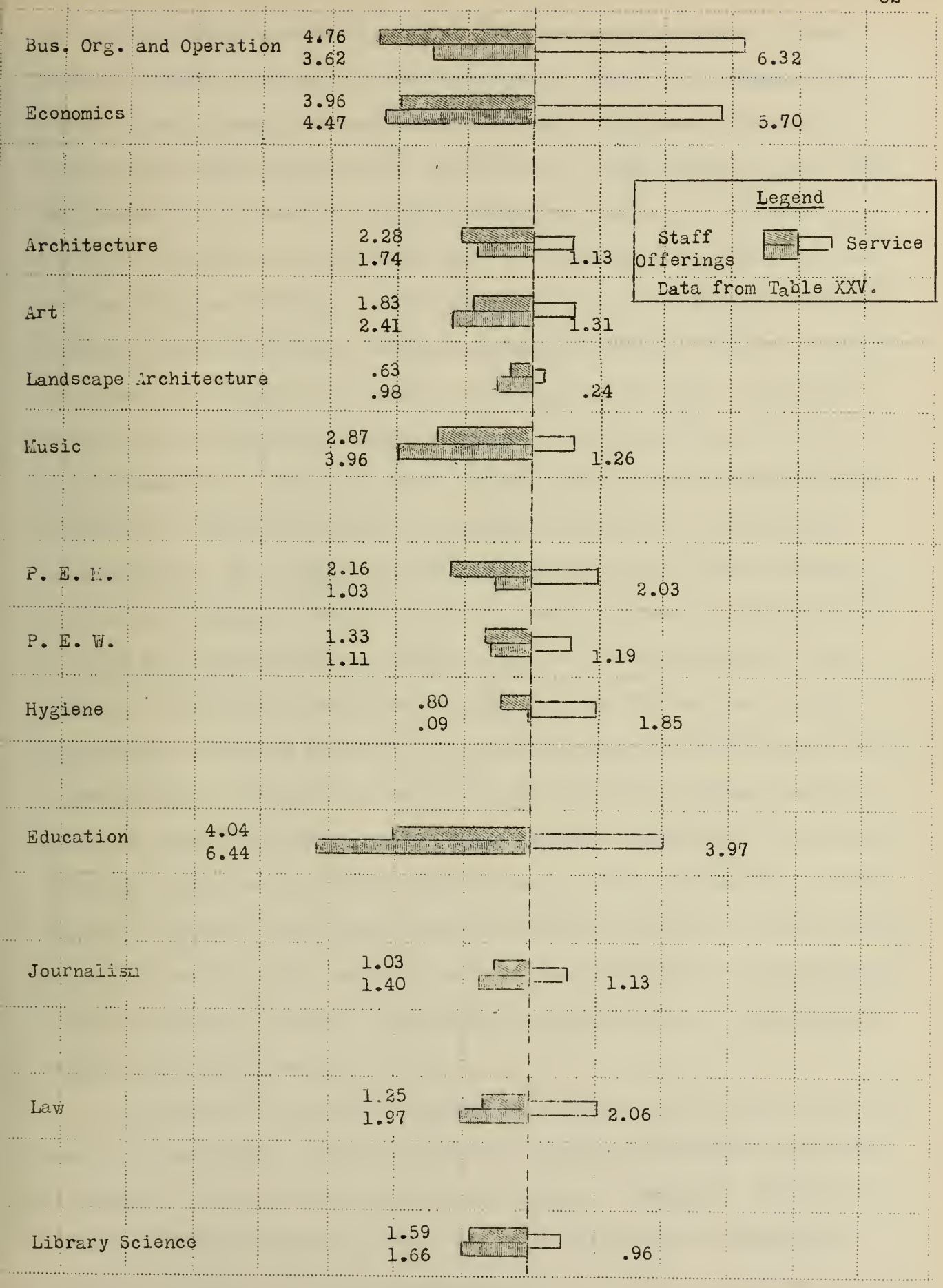

Bus. Org. and Operation
4.76
3.62
6.32
Economics
3.96
4.47
5.70
Legend
Staff Offerings
Service
Data from Table XXV.
Architecture
2.28
1.74
1.13
Art
1.83
2.41
1.31
Landscape Architecture
.63
.98
.24
Music
2.87
3.96
1.26
P. E. M.
2.16
1.03
2.03
P. E. W.
1.33
1.11
1.19
Hygiene
.80
.09
1.85
Education
4.04
6.44
3.97
Journalism
1.03
1.40
1.13
Law
1.25
1.97
2.06
Library Science
1.59
1.66
.96

Chart I c

certain differences attract attention. For some departments (e.g., German, Political Science, Psychology, Romance Languages, Electrical Engineering, Physics, Home Economics, Economics, Architecture, and Library Science) the proportion of staff approaches the proportion of listed offerings. For other departments (e.g., Chemistry, English, Mechanical Engineering, T. and A. M., and B. O. and O.) the proportion of staff is materially larger than the proportion of listed offerings. On the other hand, there are departments (e.g., Classics, History, Sociology, Railway Engineering, Animal Husbandry, Horticulture, Music, and Education) for which the proportion of staff is materially less than the proportion of listed offerings. In interpreting the facts for a given department, attention must be given to the type of instruction, the proportion of listed offerings at the graduate level, and other pertinent considerations. For example, in Music, a majority of the listed offerings, as measured in terms of semester hours, are under the head of "Applied Music" in which the instruction is individual. Obviously, this department is not typical. In Education, the listed offerings include "Educational Practice" which makes up about 54 per cent of the listed undergraduate offerings, and the listed graduate offerings include 10 units of extra-mural courses, several of which are essentially duplicates of campus courses. Furthermore, the listed offerings include several summer session courses, while the measure of staff does not include the additional instructors employed during the summer session. In English, and to a less extent in certain other departments, a large proportion of the service (units of instruction) is contributed by a few elementary courses having large registrations.

If attention is directed to departments in which instructional conditions tend to be comparable, there are differences that raise important questions. For example, consider Botany, Chemistry, Zoology, and Physics; Classics, German, and Romance Languages; History, Political Science, Sociology, and Economics; Electrical Engineering, Mining and Metallurgy, and Railway Engineering. The differences within such groups may be defensible, but they should be

carefully examined with reference to both the general educational policy of the University and the efficiency of the departments involved.

Viewing the situation as a whole, the Committee is of the opinion that the total number of courses and especially the net total hours indicate a condition about which we should be concerned. Within an institution of the scope and size of the University of Illinois, these totals will be large, but the analysis presented in the preceding pages strongly suggests the possibility of more "efficient" lists of courses in some departments.

B. Educational Purposes and Types of Courses

Section 7 of the questionnaire called for a designation of the educational purposes of courses:

a. Primarily for general education ..... Yes___ No___
b. Primarily for departmental specialization ..... Yes___ No___
c. Opportunity for student research ..... Yes___ No___
d. Outgrowth of instructor's research program, past or present ..... Yes___ No___
e. Furtherance of instructor's research program ..... Yes___ No___
f. Professional or pre-professional training ..... Yes___ No___

From responses to this question, as well as from the queries referred to the Committee, it is apparent that outside of departments whose purpose is primarily professional, many instructors have not clearly defined the educational purposes of the courses for which they are responsible. This lack of definition of purpose is suggested by the inconsistency of responses within a department and by comparison of the stated purpose with the description of content given in Section 9 of the questionnaire. In several instances, the statement of purpose did not appear to be consistent with the content of the course.

It is apparent that "general education" means different things to different persons. Otherwise, it is difficult to explain the striking divergence between departments, whose educational policies and purposes are presumably very similar, in the proportion of their courses designated as primarily for general education. Thus in the Department of English, 18 per cent of the courses are reported as designed primarily for general education; in the Department

of Romance Languages 59 per cent. There is a similar contrast between Political Science (29 per cent) and Sociology (85 per cent); and between Entomology (12 per cent) and Bacteriology (35 per cent.)

In several departments, the criterion for distinguishing between a course "primarily for general education" and one "primarily for departmental specialization" was the character of the registration in the course. If the majority of registrants were majoring in the department, the course was designated as "primarily for departmental specialization"; if not, it was classified as "primarily for general education," unless it was a service course for students pursuing a prescribed curriculum. This criterion is useful as a practical expedient, but its use suggests that a course designated as "primarily for general education" on this basis was probably not planned as such; if it had been, the criterion would have been unnecessary.

Often it is not the subject but the manner in which it is taught that determines the cultural value of a course. Furthermore, the same course may be taken by one student for the purpose of specialization, so as to be able to pursue a professional career, and by another student in order to increase his stock of general knowledge and thus be able to lead a richer and fuller life.

In view of these uncertainties, the Committee does not regard the data contained in the responses to this question as reliable evidence of the actual amount of provision for general education. The Committee was itself unable to agree upon a definition of general education which would enable it to go behind the answers to this question and determine from other evidence the proportion of courses offered that might be regarded as serving the purpose of general education. A rough estimate would indicate that 75 per cent to 85 per cent of the courses are reported as "primarily for departmental specialization," or for "professional or pre-professional training." Hence it might be inferred that the remaining 15 per cent to 25 per cent of the courses listed are to be regarded as "primarily for general education." But if it is true, as the Committee believes, that a certain amount of departmental specialization is properly a part of general education, then the provision for general education is

greater than the proportion indicated. In any case, the diversity of views represented in the responses to this question, and the differences of opinion within the Committee itself, are evidence enough of the need for a fresh study of the nature of general education and the provision for it at the University.

In a number of cases, the designation of a course as offering "opportunity for student research" did not appear appropriate. It is evident that the concept of research is used very broadly by a considerable number of instructors, as contrasted with the stricter usage of such departments as chemistry and mathematics.

Certain items in Section 8 of the questionnaire imply the following classification of courses on the basis of scope and relationship to other courses within a department.

(a) Introductory, general

(b) Introductory within a special area

(c) Further development, general

(d) Further development within a special area

(e) Summarizing and/or integrating

The optimum proportion under these heads may be expected to vary from department to department, and even within a given department there may be no best distribution of courses. However, from the point of view of educating students, it seems that there should be a general course for the purpose of introducing the student to the area of knowledge represented by the department[6] and there should also be some provision for students to synthesize and integrate their learning from the several courses that they have pursued. In some departments, the sequential relationship between courses may be such that a special course for this purpose is not needed, but in many departments

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6 A survey course, covering the areas of a group of related departments would accomplish the same purpose.

one or more summarizing and/or integrating courses would serve a valuable purpose.

The Committee was impressed by the number of introductory courses within a special area, which did not appear to lead to other courses[7] and in some departments by the number of courses characterized as a "further development within a special area." It appears that in some departments the articulation and coordination of the courses could be improved.

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[7] See Table XXVIII in Section D, "Departmental Programs of Study."

C. Overlapping of Courses*

In a strict sense, two or more courses would duplicate one another if, being offered to the same group of students by different departments, they covered approximately the same material from the same point of view or for substantially the same educational purpose. In this strict sense, there is little or no duplication of courses on the Urbana campus of the University of Illinois. On the contrary, there is an extraordinary diversity of courses both with respect to the several areas of knowledge and with respect to variable interpretations and educational and social uses of single areas of knowledge. On the one hand, there is created the problem as to how far even a great university can or should go in making the diversity of its courses equal to the whole range of knowledge in all fields and this is not an idle problem, for it is an unmistakable trend among many institutions. On the other hand, there is created the problem as to how many functionally or socially different uses can or should be made of a single and in many cases highly selected area of knowledge.

The setting of the problem of duplicating or of overlapping courses, then, is not to be found in strict duplication itself but in the amount of functional adaptation of a given body of material to different educational or social purposes. This is really the problem of the organization, departmental, curricular or otherwise, of the materials used in instruction. It seems to be pretty clear that the criteria of organization now in common use are furnished, first, by more or less natural cleavages between areas of knowledge and, secondly, by partial cleavages between the pure and the applied forms of knowledge. Courses in the College of Liberal Arts and Sciences more nearly represent the outcome of the first set of criteria and courses offered in most of the professional schools more nearly represent the outcomes of the second set. There seems to be a tendency, however, for each division of the University, and especially for the professional and semi-professional divisions, to

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* Prepared for the Committee by C. R. Griffith.

become more self-sustained and self-sufficient in the sense of offering many courses which represent the applied and particularly social uses of an area of knowledge rather than the development of a new area.

This is one of the facts which describes the setting of the problem of course duplication and overlapping. Another which seems to be growing in importance runs somewhat as follows. Courses and curricula in Colleges of Agriculture, for example, represent not only areas of knowledge, both pure and applied, but the activities of a whole class of people. Farmers, including related rural and some urban groups, constitute a considerable proportion of the population of a state like Illinois. These people do not live in partial contact with their environments nor should they try to live with a partial knowledge about their environments. Within the limits of their training, they live a complete life in the sense that some features of all that is known are of immediate and daily concern to them. They are concerned not only with the pure and applied sciences of farming but with wide reaches of economics, politics, marketing, history, the sciences, the psychology of home life, and all else that makes for a complete pattern of living.

Insofar as this is true, it tends to become a criterion for the organization of the subject matter to be taught in Colleges of Agriculture. In this way, this criterion of the organization of subject matter breaks across the natural cleavage between areas of knowledge and it also breaks across the division between pure and applied science and adds to them the needs and interests of a class of people. Since the needs and interests of this class are in a way as complete as the needs and interests of any other class, it can be argued that courses and curricula which serve the members of a particular class shall be as broad as the needs and interests of the class. For example, most courses in a College of Law are distinctively professional, because they cover what might be called a special area of knowledge. At the same time, however, lawyers deal with all classes of people in all kinds of concrete situations and it might be argued, therefore, that courses and curricula of Colleges of

Law should include, beyond the distinctly professional courses, a great variety of courses in the legal interpretations of related sciences and arts and especially, perhaps, the social sciences. In other words, a legal interpretation of some of the sciences and arts would duplicate much of the material covered in an agrarian interpretation of them and both would duplicate to a certain extent the basic subject matter fields in a College of Liberal Arts and Sciences. To be sure, some of the needs of agrarian or legal groups are met by pre-legal or pre-agrarian curricula, but it is by no means certain that such curricula solve the problem. We might even look forward to the time when Colleges of Law will follow Colleges of Agriculture and of Engineering in giving their own "duplicating" courses in fields of knowledge that are necessary to a distinct life calling. Many Schools of Journalism have already frankly recognized that principle of organization, for in serving the needs and interests of a class of people who touch life at a great many points, they have sought to include "duplicating" courses in a number of fields.

There is still another circumstance which contributes to the setting within which problems of duplication and overlapping should be studied. It has often been pointed out that the life of a nation, either in its total career or during one of its greatest centuries, is a cultural, economic, political, and philosophical whole. A few of the disciplines, such as history or literature, must recognize this fact for the history of a people or of a century or the interpretation of the literature of a people calls for surveys of a broad character. Superimposed upon the wholeness of a cultural period or group, however, are the cleavages between various sciences so that a history of economics, of politics, of sociology, of psychology, of physics, of chemistry, or mathematics, or of philosophy would mean "duplicating" courses for students who have already studied history itself or literature. Here again the problem is one of the effective organization of knowledge, not only in order to provide the basis for research but to provide the best possible conditions for instruction.

Within the setting created by the proper organization of knowledge rather than within a setting furnished by strict duplication as such, it must still be recognized that many cases of overlapping could be approved simply because very few students would be taking overlapping courses. For example, one student might become acquainted with many of the details of the Eighteenth Century by a course in the history of architecture, the antecedent general course in history being taken for granted, while another student might become acquainted with some of the details of the same century by taking a course in the history of psychology, the antecedent courses in general history likewise being taken for granted.

Instead of saying, therefore, that there is a problem of course duplication or of excessive overlapping, it would probably be fairer to submit illustrations of what might ultimately be shaped into the form of a problem. For this purpose, the following categories, although not mutually exclusive, seem to be adequate:

1. Intra-departmental overlapping in terms of
    a. Difficulty
    b. Specialization
2. Inter-departmental duplication
    a. Direct
    b. Interpretative
3. Duplication between the pure and applied branches of a discipline
4. Duplication for special topics

Intra-departmental duplication in terms of the difficulty of courses appears to be a commonly accepted feature of all departmental practices. In the data that have been submitted there are numerous examples of courses bearing almost, if not quite, the same title but which are offered both at the undergraduate level, presumably in terms adequate to undergraduate training, and at the graduate level, presumably in terms that are adequate to graduate training. If there is a problem here at all, it surely must concern the

extent to which the same course offered at different levels actually functions with respect to the levels concerned.

There may be intra-departmental duplication or overlapping because of the superposition on a general introductory course, which describes an area of knowledge as a whole, of specialized courses which further develop some of the main chapters, so to speak, of the introductory course. Here again no problem is raised, unless it were found, upon further examination, that a course which develops in detail or in a highly specialized way a large chapter in an introductory course, fails to satisfy any particular educational purpose beyond the research interests of the staff member concerned.

The study of inter-departmental duplication and overlapping seems to present quite a different situation. In the outline above, a distinction was drawn between direct duplication and interpretative duplication. This difference is a matter of judgment where the judgment must be based upon a more detailed examination of course contents than can be made at the present time. The nature of the problem can be illustrated by the course offerings in the field of statistics:

Mathematics	21	-- Theory of Probability
	22	-- Statistics
	129	-- Theory of Statistics
Economics	71	-- Economic Statistics
	72	-- Economic Statistics
Agricultural Economics	11	-- Agricultural Prices and Statistics
Education	18	-- Educational Measurements
Agricultural Economics	111	-- Agricultural Prices and Statistics
Education	123	-- Educational Statistics
Education	124	-- Educational Research

The principles of statistics are the same whether the data be chosen from schoolrooms, market reports, or experimental data. If it should turn out

upon more detailed analysis that a half or two-thirds of the time in each of the above courses is spent upon statistical methods and concepts, the above courses might be said to represent a fairly direct type of inter-departmental duplication. On the other hand, a very good case can be made out for the argument that even though a half of the time is spent upon a common subject matter, the differing practical implications of this subject matter make the offering of the several courses educationally justifiable. This is a matter which must be kept separate from, even though closely related to, the fact that very few students would take any two of the above courses in different departments. The problem is really the educational problem of finding out whether a given subject matter can be developed more intelligently in direct contact with its actual uses in a field of inquiry than it can otherwise. Present opinion seems to favor the proposition that there should be an intimate functional relation between a given subject matter and its concrete applications. This judgment may be either true or false but in both cases, the question of the organization of subject matter should be raised not only with respect to the teaching of statistics but also the teaching of most other subjects.

Other instances of semi-direct and interpretative overlapping between one department and another are as follows:

Heredity and Genetics

Zoology	5	-- Heredity
	7	-- Evolution
	25	-- Experimental Genetics
Agronomy	22	-- Improvement of Farm Crops by Breeding
	112	-- Theory and Analysis of Plant Breeding Problems
Horticulture	12	-- Evolution of Horticultural Plants
Animal Husbandry	41	-- Animal Genetics
Botany	46	-- Heredity and Evolution

Zoology	124	-- Experimental Zoology and Genetics
	115	-- Factors of Individual and Racial Development
Animal Husbandry	117	-- Animal Genetics
	121	-- Laboratory Methods in Animal Genetics

Marketing

Business Organization and Operation	2	-- Marketing Organization and Operation
	22	-- Marketing Research and Policies
	102	-- Marketing Research and Policies
Agricultural Economics	30	-- Marketing of Agricultural Products
	40-41	-- Thesis
	34	-- Marketing Dairy Products
	36	-- Marketing Horticultural Products
	37	-- Marketing Livestock
	135	-- Problems in the Marketing of Agricultural Products
	31	-- Grain Grading and Marketing

Economics

Economics	1	-- Principles of Economics
	2	-- Elements of Economics
Agricultural Economics	1	-- Introductory Agricultural Economics
	10	-- Economic Relationships of Agriculture
Engineering	10	-- Engineering Economics
Economics	101	-- Economic Theory
Agricultural Economics	110	-- Theory of Agricultural Economics

Ecology

Botany	8	-- Forest Ecology
	81	-- Plant Ecology
	88	-- Ecology

Agronomy	114	-- Principles Underlying the Production of Crops
Botany	118	-- Discussions in Ecology
Zoology	9	-- Animal Ecology
	11	-- Animal Ecology and Geography
Entomology	21	-- Insect Bionomics
Zoology	125	-- Animal Ecology and Behavior
	109	-- Physiological Ecology
	110	-- Climatic Ecology
	111	-- Experimental and Field Ecology

Business Law

Business Law	1a-1b	-- General Principles of Business Law
	10	-- Law of Security Relations and Banking
Engineering	92	-- Engineering Law
Landscape Architecture	46	-- Office Practice in Landscape Architecture
Civil Engineering	90	-- Contracts and Specifications
Law	17	-- Business Organizations

Concrete Construction

Architecture	57	-- Reinforced Concrete
	58	-- Reinforced Concrete
	60	-- Reinforced Concrete
Agricultural Engineering	20	-- Farm Concrete Construction
Civil Engineering	35	-- Plain Concrete
	36	-- Construction Materials
	105	-- Reinforced Concrete Design

Economic Development

Economics	19	-- Economic Development of the United States (1820-60)
	20	-- Economic Development of the United States since 1860
	24	-- Economic Development of Modern Europe

Economics	25 -- Economic History of England
History	17a-- Social and Economic Forces in the U.S. in the Nineteenth Century to 1860
	17b-- Social and Economic Forces in the U.S. in the Nineteenth Century since 1860
	46a-- Social and Economic History of England, 1750-1858
	46b-- Social and Economic History of England, 1848-1939
Economics	120 -- History of Economic Thought
	122 -- Economic History of the United States
History	62a-- Political and Constitutional Development of the United States to 1809
	62b-- Political and Constitutional Development of the United States since 1809
Political Science	5 -- American Constitutional System
	9 -- Principles of Jurisprudence
Law	22 -- Constitutional Law

The chances are that many of the instances of overlapping cited above are really cases of overlapping created by the difference between the pure and the applied branches of a science. In the request for information concerning courses, the instructors themselves were asked to indicate cases of overlapping between their courses and courses in related fields. This list, which follows, appears to contain most of the instances in which there is duplication due to the difference between the pure and applied branches of science.

Note: Cases in which duplication of credit is now allowed have been omitted. Cases in which overlapping is reported to be very slight have been omitted also.

COLLEGE	DEPARTMENT	OVERLAPS WITH
Lib. Arts and Sci.	Astronomy 15	Civ. Eng. 2
"	Bacteriology 5a, 5b	Dairy Husb. 11
"	Botany 41	Botany 2
"	Botany 46	Agron. 22, Hort. 12
"	Botany 79	Bacteriology 20
"	Entomology 7a	Entomology 107a
"	Geology 1a	Geology 33
"	Geology 61a-61b	Geology 95, 160a-160b
"	Geology 95	Geology 61a-61b, 125
"	Geology 96	Geology 125
"	Geology 125	Geol. 95, 96, 151
"	Geology 151	Geology 125
"	German 19a	English 130a, 130b
"	German 19b	English 130a, 130b
"	German 32	History 36a, 36b
"	German 39b	English 130a, 130b
"	English 20a	English 33, 43, 55b, 56
"	English 20b	English 55a, 55b
"	English 29	English 55a
"	English 31	English 27, 55b
"	English 39	English 55a
"	English 55a	Eng. 3, 20b,25,29,36,39
"	English 55b	Eng. 20a, 20b, 31,33,S102
"	English S102b	English 55b
"	English 120a-120b	English 130, 138, 145
"	English 130a-130b	Eng. 120a, 120b, French 105, Greek 17, German 19a-19b,39b
"	English 138a-138b	English 120a-120b
"	English 143a-143b	English 151

COLLEGE	DEPARTMENT	OVERLAPS WITH
Lib. Arts and Sciences	English 145a-145b	English 120a-120b
"	English 151	English 143a-143b
"	Speech 14	Speech 19, 20
"	Speech 18	Speech 20
Engineering	Cer. Eng. 11	Chemistry 70b
"	Civ. Eng. 22	Land. Arch. 71, 72
"	Civ. Eng. 90	Bus. Law 3
"	Railway Eng. 25	Economics 92
"	Eng. 10	Econ. 2, 35; Accy. 1a
"	Eng. 39	Econ. 41, 42, 43
Agriculture	Agri. Econ. 11	Econ.70, Educ. 18, Math. 22
"	Agri. Eng. 12	Home Econ. 2
"	Animal Husb. 1	Animal Husb. 3, 22
"	Animal Husb. 3	Animal Husb. 1, 22
"	Animal Husb. 22	Animal Husb. 1, 3
"	Animal Husb. 39	Zoology 15
"	Dairy Husb. 11	Bact. 5a, 5b
"	Home Econ. 80	Home Econ. 10
"	Home Econ. 31	Home Econ. 29, 30
Law	Law 33	Law 41, 60
Fine & Applied Arts	Art 11, 12	Art 17a, 18a
"	Art 21a, 21b	Art 25, 26
"	Architecture 60	Architecture 57
"	Land. Arch. 51, 52	Botany 5
"	Land. Arch. 74	Civ. Eng. 28
Library School	Lib. Sci. 21	Lib. Sci. 51
"	Lib. Sci. 33b	Lib. Sci. 34, 48
"	Lib. Sci. 34	Lib. Sci. 33b, 48
"	Lib. Sci. 48	Lib. Sci. 33b, 34

COLLEGE	DEPARTMENT	OVERLAPS WITH
Lib. School	Lib. Sci. 102 (h)	Education 124
Physical Education	P. E. M. 31	P. E. M. 18
"	P. E. M. 32	P. E. M. 9
"	P. E. W. 60	P. E. W. 73, Sec. G, K
"	P. E. W. 90	Hygiene 2, 10
"	P. E. W. 73, Sec. G, K	P. E. W. 60
"	Hygiene 2	P. E. W. 99
"	Hygiene 10	P. E. W. 99

Partly as a study of the problem of the organization of subject matter and partly for the sake of getting a better foundation for more complete studies of the educational significance of new courses, a topical index has been made of all of the courses now being offered in the University. By a topic is meant any "chapter, section, or part of a course which seems to stand out as a definable unit." In this respect there is, of course, a very large amount of overlapping. As a rule, in compiling this index, attention has been given only to those topics, that is, those sections or definable parts of courses, upon which at least a week of classroom or laboratory instruction is spent.

The character of the problem can be illustrated as follows. If it be granted that there is an area of knowledge and method which can be roughly described by the word "marketing," then some phase of marketing is taught in a considerable number of different courses in different departments. Eliminating instances in which the topic of marketing might be discussed for a full class hour or even for two class hours, the following instances may be cited:

Marketing, Psychological problems of, ... Psychol. 2

" Agencies and functions of, ... Agr. Econ. 1

" Forms of, prices and general problems of distribution ..... Agr. Econ. 30

" History of in United States ..... B. O. O. 25

" Methods and principles of, ... Econ. 27

" Organization and operation of, ... B. O. O. 2

" Principles of, ... B. O. O. 17

" Principles of, ... B. O. O. 22

" Principles of, ... Engineering 10

" Principles of as applied to ores, ... Mining 21

" Principles of as applied to milk, cream, butter ..... Dairy Husb. 24b

" Principles of for corporate securities ..... Econ. 35

" Principles of for dairy products ..... Dairy Husb. 24a

" Principles of for fruits and vegetables Hort.46

" Principles of for poultry products ..... An. Husb. 37

" Principles of for sheep ..... An. Husb. 27

" Principles of for swine ..... An. Husb. 26

" Principles of for vegetables ..... Hort 3

" Problems of in relation to clothing ..... Home Econ. 30

" Principles of in relation to homes ..... Home Econ. 59

" Principles of in relation to restaurants and institutions ..... Home Econ. 47

" Principles of for poultry ..... An. Husb. 40

" Problems of, in marketing agricultural products ..... Agr. Econ. 135

" Research and policies of ..... B. O. O. 102

" Dairy Products, Production, storage, sale, prices ..... Agr. Econ. 34

" Livestock, ... Agr. Econ. 34

The topical index referred to above shows a good many other cases of this same general type. They are reported not in order to suggest their immediate elimination but only to illustrate a problem. Basically, the problem concerns the criteria to be used in the organization of course material. At the beginning of this section some of the criteria in common use were mentioned. The Committee is of the opinion that still another criterion might be brought under consideration. It turns on the psychological and educational functions of the contents of courses. There seems to be a tendency, even at the college and university level, to use course content as a vocational shortcut to a specific kind of occupational achievement and not as a means of basic training. For example, the question often asked of college and university graduates is this: What do you immediately know and what can you immediately do with respect to this particular life calling? If students are to be prepared for prompt entrance into a trade, occupation or life calling, colleges and universities must be prepared to give them the relevant knowledge and training. When pushed to its logical extreme, this would mean that colleges and universities should offer special courses for as many trades, occupations or life callings as any considerable number of students or even a small number of students might demand. From the number of courses which they offer, it would seem as though colleges and universities were moving very fast in this direction.

There is, however, another question that might be asked of the graduate of a college or university: What general training do you have and what is your disciplined psychological efficiency in adapting yourself to the particular demands of this particular life calling? For example, in the case cited above involving marketing, a student might be asked not whether he knows the marketing of livestock or poultry or of securities and bonds, but whether he knows enough about marketing in general and whether through his study of marketing and other subjects he has become the kind of disciplined psychological agent who can adapt himself quickly to the particular exigencies of an

equally particular phase of marketing. The topic of marketing may not be the best possible illustration but it will serve to make the issue clear. The issue would be simply this: Shall the University undertake to teach as many different kinds of marketing as there are things to be marketed or shall it undertake to teach students in such a way that with their training, disciplined character and facilities in solving problems, they can use themselves as effective instruments in any or in a large number of particular adaptations?

This is an issue which touches the essential psychological foundations of any education whatsoever. In raising the issue, the Committee does not wish to question the presumable propriety of intense professional training for the major professions, but it does wish to ask whether such intense professional training may not have educational consequences in addition to those described by familiarity with a given body of information. If, in the professional curricula, in addition to familiarity with a body of knowledge and ability to handle such knowledge, many students gain increased ability to use themselves as effective psychological instruments, it would be fair to ask whether in less professional training and in all forms of training for what is called "general education," the ability to handle one's self as an effective psychological instrument might not be used as one of the criteria of the organization of subject matter. It is the judgment of the Senate Committee on Educational Policy that this is an important question and that, in further studies of the course offerings of the University, and especially in any studies of the possible reorganization of subject matter, it be given its proper place among the principles used by colleges and departments in laying out their programs.

D. Departmental Programs of Study

The term "program of study" refers to a series of courses indicated for students taking extended work in a department or a division of a department. A program of study may be indicated by specified prerequisites, by a prescribed curriculum, or in other ways. The courses included may be from a single department, or from two or more departments. A program of study may be prescribed in detail, but more typically it involves some options, especially at the higher levels.

Some departments have developed one or more well defined programs of study, but in several departments there is little suggestion to students in regard to a desirable series of courses to be pursued. A considerable number of courses appear not to be considered an essential part of a departmental program of study but are offered as electives for students to whom they appeal. Several departments offer service courses designed for particular groups of students outside the department, and such courses are often included in the program of study of another department.

Graphical Representation of Programs of Study. The undergraduate courses offered by the several departments have been represented graphically in order to show the nature of the program or programs of study within each department.[1] (See Exhibit A). The data used in the preparation of the charts in Exhibit A were obtained from the Annual Register for 1937-38, from questionnaires filled out by instructors for the Survey of Courses and Curricula and from comments and suggestions made by department heads. Rough drafts of the charts were submitted to the various department heads for their approval, and each department was given an opportunity to review the final form of its chart. An effort was made to have representations of programs of study conform to the statements of prerequisites in the Annual Register. However, a number of

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[1] Charts were not prepared for Agricultural Administration, Engineering, Military Bands, and Military Science and Tactics.

discrepancies between the charts and the statements in the Annual Register will be noted. Conferences with department heads revealed that in some instances the statements were erroneous; in others, obsolete. In not a few, the statements were characterized as neither erroneous nor obsolete, but for one reason or another, practice did not conform with them. In all such cases, an attempt has been made to present the true picture of the departmental practice.

In the chart for a department, the undergraduate courses are classified according to levels, e.g., "First level," "Second level," etc. Courses at the "first level" are those which have no course prerequisites of any kind, either stated or implied, and are open, theoretically at least, to any student in the university (or college) with the indicated academic standing. "First level" courses are typically introductory courses, intended either for general education or as beginning courses in a particular field.

The location of a course at the "second level" may have either of two interpretations. (a) The course has one prerequisite, or more if the prerequisite courses may be taken concurrently. In other words, the course occupies a second position in a subject-matter sequence. (b) The course occupies a second position in the departmental program of study as defined by a curriculum or departmental standing prerequisite, but there is little or no subject matter sequence with a course at the first level. Locations beyond the second level are to be given corresponding interpretations.

Figure 2 has been drawn to illustrate the scheme of graphical representation and certain aspects of departmental programs. Several types of course relationships may be noted: (a) a sequence of departmental courses running through several levels--courses 1 to 4 plus 10 to 13 or 15 to 18; (b) a sequence of departmental and non-departmental courses running into the higher levels -- courses X_1, X_2, X_3, 20, 21, 22, 23; (c) a group of courses having a common prerequisite (either one or more specified courses, or a specified standing within a department)--courses 31 to 34, and 35 to 38--the sequence

within the group being determined by the interest and convenience of the student; (d) courses for which there are no prerequisites except possibly general academic standing and which do not lead to other courses -- courses 40 to 45. Practically all departments offer some courses such as 40 to 45, and 60 and 61. Frequently these courses are designed to contribute to general education or are offered as service courses. In a number of cases the course is to be regarded as one supplementary to the departmental program of study. In the Language and Literature division of English the majority of courses are so listed. In this case the program of study may be described as "free elective."

The schematic representation of courses in most departments cannot be classified under the simple types described in the preceding paragraph. Typically a department builds its total program upon one or a combination of these types, and also offers other courses: (a) apparently unrelated introductory courses--60, 61; (b) specialized courses which are further developments of particular courses in a sequence, e.g. courses 8, 19; and (c) specialized courses which have not been fitted into a sequence but for which previous work in that particular area is necessary--55, 56, 57, 58. This last classification includes thesis courses, honors courses and special problems courses, not shown on the sample chart, but appearing on the departmental charts in a "Special" column.

An examination of the departmental charts presented in Exhibit A may lead to some misinterpretation that should be guarded against. Courses in the first two or three levels may occupy a more advanced position in the program of most students than the level of classification would indicate. For example, courses 31 to 38 at the second level in Figure 2 and even 42 to 45 at the first level may be highly specialized and represent an advanced type of undergraduate work. Courses at any one level may not necessarily be taken concurrently. None of the courses shown in Figure 2 with numbers above 30 (except 40, 41, and 60) can be taken before the junior year since they are in the "advanced

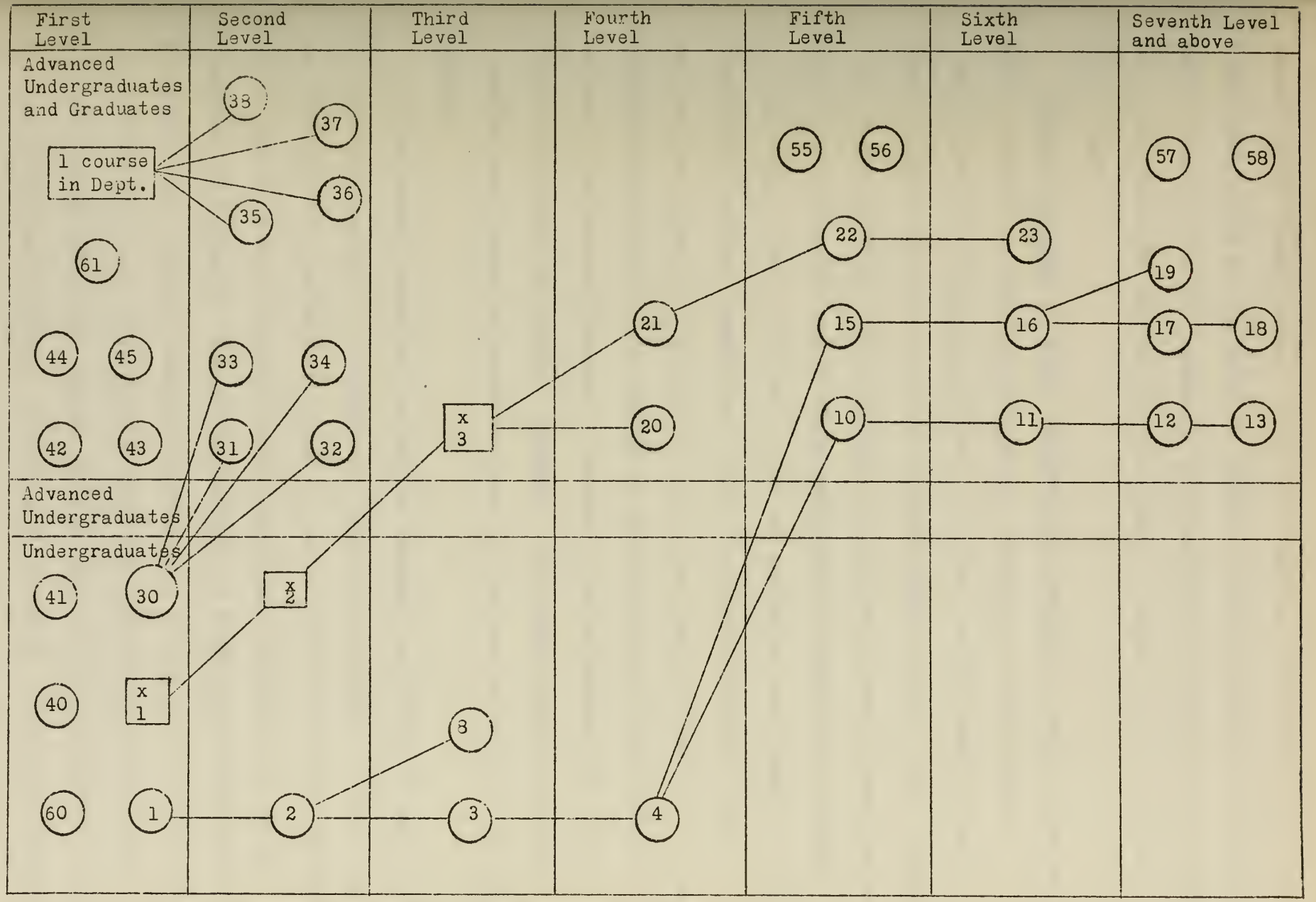


Figure 2. Scheme of Representing Departmental Program of Study.



undergraduate" classification. Finally, a chart may not indicate curriculum requirements which are expressed in other ways than prerequisites. Non-departmental courses are often recommended and frequently prescribed in a curriculum, but do not appear in any specific relationship to other courses, if at all, on the charts.

Types of programs of study. Departmental programs of study in the University of Illinois at Urbana may be roughly classified in three groups: (1) those with rather elaborate sequences of courses, usually running through eight semesters--type "a" or "b" as described above; (2) those which approach a free elective status, with a minimum of prerequisite courses, described as type "c" and "d" above; and (3) those departmental programs with sequences running through three to six levels, but yet permitting the student a fairly wide range of choice. Departments in the first classification include: Architecture, Landscape Architecture, Art, Music, Chemistry, and most of the Engineering departments. The student in these fields has little choice of sequence of departmental courses. Accountancy and Mathematics also have fairly well defined departmental programs. The modern languages and Home Economics have planned sequences but permit a good deal of choice at the higher levels.

In the second classification, English Language and Literature approaches more closely than any other department a free elective program, there being no prerequisite but academic standing for almost all of its courses, Except in the case of pairs of courses that are considered continuous, no course sequences are indicated. The course sequences in History are very limited, the prerequisite for most courses being "one year of History." An introductory course, or at most "six hours in departmental courses," is the only prerequisite for almost all courses in Philosophy, Political Science, Psychology, Sociology, and Economics. Agricultural Economics, Agricultural Engineering, Agronomy, Dairy Husbandry and Education permit a wide choice in the sequence to be followed.

In the School of Physical Education and the College of Law, curriculum requirements result in courses being taken in a particular sequence, but in most cases there is little sequential relation between courses in the sequence. In Library Science, the situation is atypical because of admission requirements. One cannot classify these departments in any of the three groups. But with these exceptions, all of the other departments for which charts were prepared fall into the third classification.

Some Aspects of Departmental Programs of Study.--The charts presented as Exhibit A[2] should be examined with reference to the details of the program of study in the several departments. Table XXVIII has been prepared from these charts to show the number of levels through which the departmental programs of study extend and the number of courses at each level. Table XXVIII does not include Physical Education, Law, Library Science, General Engineering, Agricultural Administration, and Applied Music. For the purpose of this table, Educational Practice is counted as one course. Thesis courses and special problems courses--found in the charts in the "Special" column, have also not been counted. The total number of undergraduate courses, with the exceptions just noted, are indicated in the first column, and the number of courses at each level in the subsequent columns. The numbers in parentheses refer to the terminal courses at the several levels. In a few instances an absence of departmental courses at a particular level is indicated by a dash; in all such cases, non-departmental courses which are prerequisite to subsequent departmental courses will be found at these levels. Non-departmental courses which appearon the chart have not been included in the table.

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2 A complete set of the charts forming Exhibit A will be furnished to each Dean and Director. Each department will be furnished a copy of its chart. Department heads and other members of the Senate may obtain charts for particular departments from the Chairman of the Committee.

Department	Total*	Levels 1	2	3	4	5	6	7+
Accountancy	16	3(1)	2(1)	1(-)	2(1)	3(2)	2(1)	3(2)
Agricultural Economics	20	2(1)	2(-)	15(15)	1(1)			
Agricultural Engineering	11	2(1)	7(5)	2(2)				
Agronomy	16	2(1)	5(5)	1(-)	7(6)	1(1)		
Animal Husbandry	23	2(-)	5(3)	6(3)	10(10)			
Architecture	36	4(-)	4(3)	3(-)	3(-)	4(1)	5(2)	13(9)
Art	89	11(3)	9(4)	11(1)	10(2)	16(-)	16(10)	16(8)
Astronomy	5	1(-)	3(3)	---	---	1(1)		
Bacteriology	6	3(-)	3(3)					
Botany	28	3(-)	9(3)	12(9)	4(4)			
Business Law	5	2(2)	---	1(-)	1(-)	1(1)		
Business Organization and Operation	14	1(1)	2(-)	8(6)	3(3)			
Ceramic Engineering	17	---	---	1(-)	1(-)	4(2)	6(2)	5(5)
Chemistry	57	4(-)	3(-)	4(1)	2(1)	7(3)	13(10)	24(19)
Civil Engineering	39	8(6)	5(2)	2(-)	2(-)	3(2)	3(2)	11(7)
Classics--Latin	20	6(5)	3(-)	4(1)	7(7)			
Classics--Greek	14	6(5)	1(-)	2(1)	1(-)	2(1)	2(2)	
Dairy Husbandry	21	5(2)	13(12)	2(2)	1(1)			
Economics	48	4(2)	27(24)	14(12)	3(3)			
Education**	36	16(13)	5(4)	10(9)	5(5)			
Electrical Engineering	30	3(3)	---	---	---	6(-)	6(4)	15(12)
English--Language and Literature	42	33(30)	9(9)					
English--Scandinavian	10	6(4)	2(1)	1(-)	1(1)			
English--Rhetoric	11	1(-)	1(-)	3(2)	6(6)			
English--Speech	15	---	---	1(-)	3(-)	7(6)	4(4)	
Entomology	17	3(1)	9(7)	4(3)	1(1)			
General Engineering Drawing	11	4(1)	4(3)	2(1)	1(1)			
Geology	19	3(1)	5(3)	8(5)	3(3)			
Geography	18	5(2)	5(3)	6(-)	2(2)			
German	26	2(1)	1(-)	1(-)	2(1)	6(3)	3(2)	11(8)

* Does not include courses classified as "Special" in Charts. **Educational Practice is counted as one course.

Table XXVII (continued)

Department	Total	Levels 1	2	3	4	5	6	7+
History	71	11(8)	60(60)					
Home Economics	40	7(5)	1(-)	4(2)	2(-)	8(4)	16(11)	2(2)
Horticulture	31	7(3)	12(9)	8(7)	4(-)			
Journalism	41	8(4)	5(2)	7(5)	18(15)	3(3)		
Landscape Architecture	24	6(4)	3(1)	3(-)	3(2)	1(-)	1(-)	7(4)
Mathematics	33	4(-)	3(1)	3(1)	2(-)	11(4)	7(5)	3(2)
Mechanical Engineering	30	2(1)	1(1)	---	---	6(1)	6(2)	15(12)
Metallurgy	15	---	---	---	---	5(2)	5(2)	5(3)
Mining	17	---	1(1)	1(1)	---	2(-)	2(1)	11(7)
Music (not including Applied courses)	51	7(-)	5(-)	6(2)	3(2)	7(1)	6(3)	17(11)
Philosophy	16	5(4)	10(9)	1(1)				
Physics	32	1(1)	2(-)	4(2)	2(-)	17(11)	6(6)	
Physiology	7	3(-)	4(4)					
Political Science	22	9(8)	5(5)	8(8)				
Psychology	21	1(-)	8(7)	12(12)				
Railway Engineering	23	2(1)	1(-)	2(-)	3(3)	4(4)	2(1)	9(7)
Romance Languages--French	26	1(-)	1(-)	3(1)	2(-)	3(2)	1(-)	15(14)
Romance Languages--Spanish	19	1(-)	1(-)	1(-)	1(-)	3(-)	3(2)	9(8)
Romance Languages--Italian	6	1(-)	1(-)	2(-)	2(2)			
Sociology	22	4(3)	14(13)	4(4)				
Theoretical and Applied Mechanics	12	---	---	1(-)	2(1)	5(-)	4(4)	
Zoology	27	6(3)	4(3)	11(7)	5(4)	1(1)		
	1306 (831)	231 (131)	286 (214)	206 (126)	131 (88)	137 (56)	124 (76)	191 (140)

a. Number of Levels. Of the fifty-two departments listed in Table XXVIII, eighteen have course sequences that run through seven or eight levels. If a student in these departments begins with the introductory course of the sequence, he cannot complete the sequence in less than seven semesters (more typically eight). Unless a student is admitted to a course beyond the first level on the basis of high school preparation or a proficiency examination, he must begin such a program of study in the first semester of the freshman year if he is to complete it by the end of the senior year. These eighteen departments are:

Accountancy
Architecture
Art
Ceramic Engineering
Chemistry
Civil Engineering
Electrical Engineering
German
Home Economics
Landscape Architecture
Mathematics
Mechanical Engineering
Metallurgy
Mining
Music
Railway Engineering
French
Spanish

On the other hand, twenty-five of the fifty-two departments have course sequences which run through not more than four levels. In other words, a student may take the introductory course in one of these departments as late as the beginning of his junior year, and still become eligible for the final course in the sequence by the end of his senior year. These departments are:

Agricultural Economics
Agricultural Engineering
Animal Husbandry
Bacteriology
Botany
Business Org. and Oper.
Latin
Dairy Husbandry
Economics
Education
English--Lang. and Lit.
Scandinavian
Rhetoric
Entomology
General Engineering Drawing
Geology
Geography
History
Horticulture
Philosophy
Physiology
Political Science
Psychology
Italian
Sociology

In a number of these departments, it is possible for a student who has had the introductory course to acquire enough hours for a major in two semesters.

There is some relationship between the number of courses offered by a department and the number of levels over which its program of study extends,

but in general the number of courses does not appear to be a determining factor. Two departments with a large number of courses (History, 71 courses and English Language and Literature, 42 courses) have courses only through the second level, while a number of smaller departments, some offering less than twenty courses, have sequences running through the eighth level.

b. Number of terminal courses. A terminal course is defined as one which is not a prerequisite for any other undergraduate course within the department. A few such courses are prerequisites for courses in other departments and in a very few other cases an elementary course which is not listed as a prerequisite is normally taken by students before they undertake other courses within the department. With these exceptions, which apply in a relatively small number of cases, a terminal course is to be interpreted as meaning that from the information given in the Annual Register one obtains no suggestion for further study in that particular area at the undergraduate level.

Of the 231 courses at the first level, 131 are terminal courses. In general (See preceding paragraph for two classes of exceptions), these courses belong in no sequence, and are not indicated as being directly related to any other course offered in the respective departments; they are in themselves both introductory and terminal. The proportion of terminal courses at the other levels is interesting but probably does not have much significance, at least beyond the second level.

Several departments have no terminal courses at the first level and a number of others offer only one such course at this level. In contrast there are several departments in which the proportion of terminal courses at the first level is large. The most significant cases include Classics (both Latin and Greek), Education, English Language and Literature, History, Philosophy, Political Science, and Sociology.

The desirability of terminal courses at the first level, or at the second level, depends upon their nature and purpose. If such a course is designed to fulfill a general education function or is offered as a service

course for students not majoring in the department, e.g., Accountancy 12, it may be a valuable offering. On the other hand, if the course is narrow in scope and is relatively unrelated to other courses, its educational value is not likely to be high. An evaluation of a particular terminal course at the first level, or even at the second level, should not be made without a careful inquiry into its nature and purpose, but the presence of a large number of such courses in a department may be interpreted as raising the question: Has the department planned its listed offerings wisely as a means of educating undergraduate students?

The Committee believes that a specified or indicated program of study is not only helpful to students, but also that its presence is indicative of the degree to which the department has given attention to the education of undergraduate students. The individual courses within a department should be planned with care, but there should also be careful planning of a sequence or sequences of courses for students taking extended work within the department.

E. Departmental Practices and Policies. The practices and policies with reference to the planning, appraisal, and modification of courses and programs of study vary among departments. The Department of Physical Education for Men has a curriculum committee which meets regularly and "the department examines its courses at least once a year to ascertain whether it would be feasible and desirable to make changes in existing courses by improved articulation, or by eliminating obsolete material." At the other extreme there are departments which have no curriculum committee (or similar committee) and which apparently have done little or nothing in the direction of periodic systematic appraisal of their course offerings or consideration of means of improvement.

Developments in a field of knowledge should lead to changes in content and there is a place for experimentation with variations in content and organization of a course; little or no change in the content of a course over a period of years is likely to be indicative of inefficiency. There are advantages and disadvantages in any single method of selecting the content of a

course. Two practices regarding the determination of content, or change of content, of courses prevail so frequently that they may be considered as typical:

First, in section courses, involving several instructors, there is usually some procedure for obtaining an approach to uniformity in content and organization in the several sections. The procedure varies: regular meetings of the staff members involved; detailed outline prepared by a staff member or by a committee; selection of a basic text by the staff member in charge of the course or by the entire staff involved.

Second, outside of courses involving several instructors, the typical practice is for the instructor in charge of the course to determine its content, at least within a general outline, and in many instances the content is varied from year to year. This method has the advantage that, by giving individual instructors freedom and holding them for results, strong motivation is likely to be obtained. On the other hand, freedom leads to overlapping of content and lack of proper articulation with other courses within the field and with related courses in other departments.

The attention of the Committee was called to a course in the department of Agronomy in which the instructors visited for one semester all of the lectures, laboratory periods, and quizzes of a prerequisite course given in another college, and at the end of the semester held a series of conferences with the instructors in charge of the prerequisite course as a means of improving the articulation between the two courses. This procedure appears to be the exception rather than the rule. Too often an instructor has only a limited acquaintance with other courses in his own department and with related courses in other departments. In the preceding section it was noted that in several departments there is a relatively large number of terminal courses at the first and second levels. This condition may be a reflection of the freedom of instructors and the lack of departmental belief in the necessity, or desirability, of coordination and articulation among courses.

Though there may be exceptions, a planned program of study within a department would seem desirable. In general, there should be a progression, in the work offered by a department, to form a series running from the elementary to the graduate level. In the preceding section, it was pointed out that some departments do not indicate a program of study, except to a very limited degree. In some such cases, it appears that the existing condition represents the policy of the department. In other cases, it perhaps reflects departmental inertia or even indifference.

Beyond the introductory or elementary level, courses tend to be specialized and require instructors with appropriate training. This condition has led to certain courses being considered the "property" of particular instructors. Such a policy has its good features, but if carried too far may lead to provincialism among the instructors within a department and to a lack of coordination and articulation among courses. A method followed by the department of Mathematics tends to overcome this condition. A portion of the advanced work in this department is represented by three series of courses, each including six hours in the advanced undergraduate classification and two units of graduate work. Each of these courses is rotated among a small group of instructors. In most cases, no person gives, in one semester, more than one course in this series, the rest of his teaching time being devoted to freshman and sophomore work. Furthermore, it is understood that no more than one-third of the content of a course should be dictated by the special interests of the person giving it at a particular time.

The fields of knowledge represented by the several departments differ and the policy prevailing in the department of Mathematics, where the number of students and staff is large, may not be applicable to other fields. In general, any advanced course, which is not already standardized, requires much time and effort to build into a compact unit. Besides, many students select a course because of the personality and reputation of the instructor and a live course in the hands of one instructor may die in the hands of another

instructor. Therefore few instructors are likely to spend the time and effort to prepare such a course if they are to turn it over to another instructor after it has been worked up. It seems reasonably good teaching administration, therefore, to retain the control of any specialized course at least partially in the hands of the one who organized it. However, since a department is more of a continuing unit than an instructor, an effort should be made to develop younger members of the department to the point where every specialized course considered as fundamental to the program of the department may be shared with a younger instructor selected in view of his interest in that particular field. But before a well-organized effective course is turned over to another instructor, the second instructor should have been an understudy of the first one for some time.

The departments vary with reference to the number of new courses created during recent years. In some, especially in those departments which have attained an increased functional status within the University, a relatively large number of courses have been added during recent years. The principal causes contributing to the creation of new courses seem to be:

(a) A social, economic, or professional development which is interpreted as calling for specialized training.

(b) Developments within a field of knowledge which suggest courses in addition to those already offered within a department.

(c) Interest of an instructor in developing a specialized area or in developing a new synthesis within a relatively large area, perhaps extending beyond the boundaries of his department.

(d) The pressure of groups outside of the University.

The stream of proposals for new courses raises a fundamental question of University policy, both budgetary and educational. Although it may be maintained in a particular case that the proposed course will result in no increase in the departmental budget, in the long run, the addition of courses calls for increases in staff, equipment, and buildings, and hence does affect the budget.

The total amount of the budget is not controlled by the University and the departmental allocations within this total are a pertinent factor in determining the educational program of the University.* Hence the addition of a group of new courses within one department over a period of a few years may seriously alter the balance of that program.

There is also a fundamental question of educational efficiency. What type of program is most valuable to the student, considering his life through the years following graduation? Is a program which is heavily weighted with specialized courses, designed to be immediately practical, more valuable to the student than a program weighted with broader courses in which basic principles and theories are emphasized? Social and economic changes, as well as the other factors that contribute to determine a person's life activities, require that he adapt himself to new situations. Hence, in general, it is not possible for an institution to equip its students by means of special curricula so that they will be "prepared" for their life activities. On the other hand, unless we deny the possibility of developing traits and abilities which enable one to meet new situations and make adaptations, an institution can contribute a fundamental preparation for life activities.

In general, the practices of departments in adding new courses have been in the direction of increasing the number of specialized courses. A large proportion of the proposals for new courses appear to be based upon the thesis that "practical" (ad hoc) courses are appropriate and desirable. Frequently, the proposed course represents to a greater or less extent an application of principles, theories, and techniques from other departments to a special field. The trend is in the direction of each department or college becoming

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* See Charts 1a, 1b, 1c, Chapter III, Section A, and the accompanying text.

self-sufficient and utilizing less the possibilities of service from other divisions of the University.

In view of the total number of courses now listed, the wide range of curricula offered, and the annual increments of new courses,* the Senate Committee on Educational Policy believes that the several departments should critically examine their respective offerings for the purpose of reducing the number of courses. Unless a substantial number of eliminations can be made from the present list of courses, the Committee is of the opinion that the continued addition of courses will, in the relatively near future, create a situation which will adversely affect the efficiency of the University as a means of educating students, especially at the undergraduate level. Except where there is an obvious gap in the course offerings of a department, a proposal for the development of a new course should grow out of a general evaluation and reorganization of the total group of courses. Furthermore, the effect of this procedure should usually be to decrease the "net total hours" offered by the department.

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* See Section A of this chapter for data on these items.

CHAPTER IV

RECOMMENDATIONS

The facts relative to the number of courses and curricula, the evidence pertaining to the overlapping of courses, and other observations reported in the preceding chapters, outline a picture of the educational program of the University of Illinois at Urbana which the Senate Committee on Educational Policy believes should be interpreted as raising the questions: What is the level of efficiency of this program as a means of educating students, especially at the undergraduate level? Is the trend with respect to the number of courses and curricula, extent of overlapping, and other aspects of the situation in the direction of greater or less efficiency? Are the instructional resources of the University being utilized most wisely? Are the several colleges, schools, and departments actively concerned about the effectiveness of the courses and programs of study offered to students, especially at the undergraduate level? Has adequate provision been made for dealing constructively with the problems involved?

Viewing the total situation, the Committee does not regard the educational program of the University as inefficient to any marked degree. Some departments appear to have developed carefully considered lists of courses and to have outlined carefully planned programs of study for students. On the other hand, the Committee believes that in some areas, improvement could be effected by developing new syntheses of course content, which in addition to providing better articulation with other courses and reducing the total number of courses offered, would increase the effectiveness of the courses as means of educating students, especially at the undergraduate level. The development of appropriate programs of study in some departments* would also increase our educational efficiency.

It is difficult to evaluate the current trend; in some divisions of the University, there is much committee and faculty activity, perhaps more than at

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* See Chapter III, Section D, for description of existing conditions.

any previous time, directed toward the improvement of conditions, and on this basis it might be argued that we are moving in the direction of increased educational efficiency. The argument would perhaps be valid in certain areas, but again viewing the total situation with respect to the number of courses and the related matters of overlapping of courses and purpose and type of courses, the Committee is inclined to believe that the general trend is in the direction of less rather than greater efficiency. Although our student body is large and diversified with respect to interests, there is a saturation point beyond which the creation of new courses within a given area involves undesirable duplication of content, or subject matter whose educational value is questionable.

In addition to the inefficiency that may result directly from the multiplication of courses, there is also, through the budget, an indirect effect upon the total program of the University. It is frequently maintained that a proposed new course will not affect the departmental budget, but it does not appear reasonable that the addition of fifty or more new courses a year does not affect the budget. The number of small classes at the undergraduate level* is doubtless in part a reflection of the number of courses now offered. Small classes are relatively expensive, and funds devoted to maintaining them decrease the amount available for building up and maintaining our staff and for the support of research. Hence it appears that some improvements might be made in the utilization of the instructional resources of the University.

The Committee does not believe it is wise to recommend any specific curtailment of courses or curricula, nor to recommend any specific administrative machinery for achieving this end. A few courses have not been given for several years and should be dropped. A number of undergraduate courses have very small registrations and some of these courses doubtless should be discontinued or given less frequently in the interest of institutional efficiency. But it is likely that a greater reduction in the number of courses would result from a

* See Chapter III, Section A.

critical appraisal of listed offerings and the development of new syntheses of subject matter. Hence, the Committee recommends that the several colleges, schools, divisions, and departments be requested to examine critically their courses and curricula from the point of view of their efficiency in educating students, especially undergraduates. In making this critical examination, the Committee suggests that attention be given to the following:

(a) The elimination of obsolete content and content of little value for the education of undergraduate students.

(b) The possibility of new syntheses of subject matter which would reduce the number of courses.

(c) The articulation of the applied courses with prerequisite courses, and the avoidance of over emphasis upon commercial and industrial practices or technicalities of limited applicability.

(d) The possibility of decreasing inter-departmental overlapping of courses by utilizing existing courses in other departments, rather than developing or retaining applied courses.

(e) A program of courses planned from the point of view of educating students rather than courses reflecting the interests and scholarship of staff members.

Departments vary with references to the degree of control exercised over the general pattern of courses offered and the control of the individual courses.* The Committee believes that departmental planning and systematic appraisal by the department are essential for developing and maintaining a highly efficient list of courses. Although the Committee recognizes that some exceptions should be made, it recommends that below the graduate level, a course should be considered the "property" of the department rather than the "property" of a particular staff member. This principle implies that the number and general pattern of undergraduate courses should represent the best program of the department for the education of students rather than the specialized

*See Departmental Practices and Policies, Chapter III, Section E.

interests and scholarship of the staff, that the general outline of each course and the position of the several courses in the departmental program of study should be determined by the department, that the courses will be subject to review, appraisal, and re-organization by the department, and that within reasonable limits, the assignment of staff members will be varied as a means of broadening their acquaintance with the work of the department.

The Committee believes that steps should be taken to reduce the number of courses with small registrations and it recommends that when the average of two successive registrations is less than ten in an undergraduate course, or less than three in a graduate course, the course shall not be listed in the Time Table unless approved by the Provost. This rule shall not apply to honors, thesis, or other courses in which the instruction is essentially individual, or in which the nature of the work, or limitations of equipment, make small classes imperative.

Several courses listed in the Annual Register have not been given during the past five years. The Committee believes it unwise to continue indefinitely a course which is not given and recommends that a course not given during the three years preceding be dropped from the list in the Annual Register. If a department believes a course should not be dropped on this basis, it may petition for retention, following the procedure prescribed for obtaining approval of a new course.

Recently, a procedure has been developed by the University administration for obtaining approval of a proposal for a new course. The Committee commends the practice of requiring the approval of a central authority before a new course may be offered. The development of new courses and even other curricular changes within a department or within a college or school may and frequently do affect other divisions of the University. By calling attention to existing courses with which a proposed course may overlap, and by questioning or commenting on other aspects of the proposal, the Provost and the Director of the Bureau of Institutional Research are contributing to limiting the number of

new courses that are approved. However, in view of the present status and the trend toward more and more courses, restricting the number of new courses is not sufficient. There should be substantial eliminations from our present offerings. The Committee recommends the development of an aggressive policy with reference to stimulating the evaluation and revision of existing courses and the disapproval of proposals for new courses. The Committee further recommends that the President appoint a committee of seven members to advise the Provost on matters of policy pertaining to the approval of new courses and related aspects of the educational program of the University. It is suggested that the appointments to this committee be from the Senate Committee on Educational Policy and the committees fulfilling a similar function in the several colleges and schools.

The extent to which the courses within a department have been organized into a program of study, indicated by prerequisites or in other ways, is shown by the charts in Exhibit A, and a summary of the situation in the several departments is given in Chapter III, Section D. In some fields, the sequential relationship of the content of courses is such that the specification of necessary or desirable prerequisites outlines a program of study. In other fields, a program of study is based, at least in part, upon the judgment of the department in regard to a combination of courses that will provide effective training for a given purpose. The Committee believes that by indicating one or more programs of study, a department renders a valuable service to students and increases its educational efficiency. The Committee recommends that unless the matter is covered by a prescribed curriculum, the statement in the Annual Register in regard to a major in a department be expanded to include one or more suggested sequences of courses. The training of teachers for secondary schools is an important function in a number of departments, and in such departments, the Committee recommends that a sequence of courses be indicated for this purpose, as well as for other purposes that the department may recognize.

In preparing the charts presented in Exhibit A, the attention of the Committee was called to several instances in which the information given in the Annual Register was erroneous, incomplete, or did not conform to practice. The Committee recommends that the department heads and the deans and directors be requested to give critical attention to the copy submitted for the Annual Register, to the end that the information given be correct and in conformity with current practice.

The classification of courses in the Annual Register is not uniform. A few departments have merely "Courses for Undergraduates" and "Courses for Graduates." Other departments have three classifications below the graduate level. The Committee recommends that the following classifications be employed except where they are not appropriate: Courses for Undergraduates (courses designed for freshmen and sophomores); Courses for Advanced Undergraduates (courses designed for juniors and seniors); Courses for Advanced Undergraduates and Graduates.

The Committee recommends that beginning with the Time Table for the first semester of 1940-41, courses be renumbered according to a system in which the classification will be indicated by the numbers assigned: e.g., Courses for Undergraduates, 1 to 99; Courses for Advanced Undergraduates, 100 to 199; Courses for Advanced Undergraduates and Graduates, 200 to 299; Courses for Graduates, 300 to 399. The Committee recommends that a Committee on the Renumbering of Courses be appointed to develop the system and to supervise its installation.

A general index of the efficiency of departmental organization may be expressed as a ratio of the instructional units administered by the department to the number of full-time staff members of the department. (Cols. 9 and 10, Table XXV, Chapter III). In courses involving a considerable amount of laboratory work, this ratio will be less than for courses of the lecture, recitation, and discussion type of instruction.

For all divisions of the University which admit students directly from the high schools the composite values of the ratios of instructional units to full-time staff are as follows:

Departments with non-laboratory courses or courses involving small proportions of laboratory work 1.25

Departments with courses involving large proportions of laboratory work 0.75

Within either classification, a deviation from the average ratios may be defensible, but marked differences should be carefully examined with reference to both the general educational policy of the University and the effective instructional organization of the department concerned. The Committee recommends that administrative officers and others concerned with the planning of the development of the University give attention to the facts presented in Table XXV.

Appendix A: Questionnaire and Instructions.

Appendix B: Outline for Departmental Reports.

INSTRUCTIONS FOR ANSWERING THE QUESTION BLANK ON SURVEY OF COURSES AND CURRICULA

Item 4a. If the course is relatively new, for example, offered during the past ten years, a precise date is desired. If the course is one that has been offered for more than ten years, an approximate date will be satisfactory. If the course is a modification of a former course bearing a different number please give the necessary explanation under "Remarks" on page 4 if there is not space on the first page.

Item 5. If the course is not offered at the time this question is answered, give per cents for last registration. In the case of a new course to be offered for the first time during the second semester of 1938-39, give estimates.

Items 6, 7, and 8. The function of these items is to obtain information concerning the purpose of a course and its relation to other courses. It may be that for some of the statements neither a "yes" nor a "no" response seem appropriate for certain courses. In such cases no response should be made. If the printed form does not seem to provide opportunity for giving all essential information relative to the purpose of a course and its relationship to other courses, explanatory statements will be appreciated.

Statements 6c and 6d and statements 7a and 7b are designed to obtain information which may be used for identifying those courses designed primarily as contributing to a general (liberal) education and those designed primarily for students who are specializing within a given field. Some courses may contribute to both functions but frequently, perhaps usually, this will not be the case. Hence, do not give a "yes" response to both 6c and 6d and 7a and 7b unless you intend to say that the course is definitely intended to fulfill both functions.

Please give special attention to the requests for information concerning prerequisites under Item 8. The Committee has carefully examined the information in regard to prerequisites given in the Annual Register for 1937-1938 but in some cases the information in this source is not clear.

A "yes" response should not be given to both 8c and 8d. 8i and 8j are to be answered only when a "yes" response is given to 8h.

Item 9. If the space on page 3 is not sufficient for an adequate outline of the course, an extra sheet may be inserted but it should be labeled with the department title and number of the course. If there is a mimeographed or printed outline of the course, a copy of it may be substituted for the response called for on page 3, provided the "approximate number of class hours devoted to each topic" is indicated.

Item 10. Do not overlook this opportunity to give any explanations or additional information that you believe would be helpful to the Committee.

Please note that this report is to be approved by the Head of the Department or by someone designated by him.

UNIVERSITY OF ILLINOIS

Survey of Courses and Curricula

This blank is to be filled out for all courses, both undergraduate and graduate, except research courses, nors courses and thesis courses, but including extra-mural courses and summer session courses unless ey are identical with courses offered during the regular year. A report is desired for all such courses ted in the 1937-38 Register and for new courses offered during the summer session of 1938 or during the ar of 1938-39.

In the case of a course having two or more sections, a single outline will be sufficient, unless the purse and content vary. In such a case, a report is desired for each distinctive purpose or content.

. College (School)_____ 2. Department_____

. Course No. _____ Title_____ Credit_____

. Offered (check)

	'32-'33	'33-'34	'34-'35	'35-'36	'36-'37	'37-'38	'38-'39
Sem. I							
Sem. II							
Summer	'32	'33	'34	'35	'36	'37	'38

5. Distribution of registration in terms of per cents

Freshman	
Sophomore	
Junior	
Senior	
Graduate	
Professional	
Total	100

a. Year when course was first offered_____

. Curricular purpose of course (Answer as many as are pertinent.)

a. Required in_____curriculum

b. Required for students majoring in_____

c. Elective for departmental major or specialization ..... Yes____ No____

d. Elective contributing to general (liberal) education ..... Yes____ No____

e. Elective for students in_____
curriculum, department, etc.

. Educational purpose of course (Answer as many as are pertinent.)

a. Primarily for general education ..... Yes____ No____

b. Primarily for departmental specialization ..... Yes____ No____

c. Opportunity for student research ..... Yes____ No____

d. Outgrowth of instructor's research program past or present ..... Yes____ No____

e. Furtherance of instructor's research program ..... Yes____ No____

f. Professional or pre-professional training ..... Yes____ No____

g. _____

8. Relation to other courses (Answer as many as are appropriate.)

a. Prerequisite(s), if any_____
Name course(s)

b. This course is a prerequisite for_____
Name course(s)

c. An introductory survey of the field of knowledge represented by your department ..... Yes____ No____

d. An introductory survey of a special area of knowledge within the total field represented by your department ..... Yes____ No____

e. A further development of:
(i) A course described under -c- ..... Yes____ No____

(ii) A course described under -d- ..... Yes____ No____

f. An application to your field of an area of knowledge represented by some other department_____

_____
Name department and course(s)

g. A summarizing and (or) integrating course ..... Yes____ No____

h. In your judgment, does this course overlap to any considerable extent with any other course, either in your department or in another department?..... Yes____ No____

If so, name the common topics and the courses.

Topics	*Courses*
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____

i. Is there any restriction of credit for duplicating courses?_____

_____

j. What is the justification of this duplication?_____

_____

Content of course

a. Topical outline of course (Give under major and minor headings the principal topics covered in this course together with the approximate number of class hours devoted to each topic.)

(Insert extra page if needed)

See next page.

9. Content of course (concluded)

b. Basic text(s)_____
Give author and title

c. Special syllabus_____
Give author and title

d. Required readings_____
Name principal references

10. Remarks: Give any explanations or additional information that you believe would be helpful to th Committee.

This report prepared by_____

Date_____

Approved_____
Head of Department

Return this blank to W. S. Monroe, Chairman, Senate Committee on Educational Policy, Room 207 Administration, East

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OUTLINE FOR DESCRIPTION OF A DEPARTMENT

1. General function or functions fulfilled by department.
   Only a brief general statement enumerating the functions--service to other departments or colleges, department specialization, general or cultural function, teacher training, vocational or professional training, research, etc.--and indicating the principal ones is expected.

2. Number of 1 hour, 2 hour, 3 hour, etc., courses. (See separate sheet for form of table and directions.)

3. Offering of courses--regularly, alternately, irregularly, not offered. (See Column 4a-4 of Tabulation from questionnaire.)

   A statement giving the proportion of the "total courses" that are given "regularly", i.e., once each year or each semester, "alternately", i.e., in alternate years, "irregularly" and "not offered" during the period 1932-33 to 1938-39. An explanation should be added for courses offered "irregularly" and for those "not offered".

   General Note. It should be kept in mind that as a rule, questionnaires were not returned for research courses, honors courses and thesis courses. This condition should be taken into account when computing proportions.

   It is not necessary to compute precise proportions. Approximate determinations will be appropriate.

4. Homogeneity of registration. (See Registration--per cents)
   A general statement is desired. Registration in a course is completely homogeneous when 100 per cent of the students belong to a single class (freshman, sophomore, etc.) It is relatively homogeneous when 90 to 100 per cent belong to two adjacent classes, e.g., junior and senior. It is heterogeneous when the students are from four classes, e.g., sophomore, junior, senior, and graduate, or when the registration is fairly evenly distributed among three classes. Cases of heterogeneous registration should be explained, especially those involving graduate students.

5. Courses classified by purposes (See Columns 7a to 7g).
   A statement characterizing the department with reference to the educational purposes of its courses. It is not necessary to distinguish between "departmental specialization" and "professional or pre-professional training". List by number and title the courses that are "primarily for general education."
   Note. The tabulation of courses by purposes (Columns 7a to 7g) probably should be checked, at least the entries in which a question mark appears.

6. Courses classified by type. (See Column 8)
   A statement characterizing the department with reference to the types of courses offered. List by number and title the courses classified under "f" and "g".

7. Overlapping courses
   A study of overlapping courses is being made for the Committee by Dr. C. R. Griffith. When his report is available, instructions with reference to this item will be formulated.

8. Educational program of department, including administration of announced course sequences or curricula.

Under this head, the following questions should be answered:

(a) Has the department announced by means of stated prerequisites or by means of a prescribed curriculum one or more programs of study for students? If so, describe briefly the program or programs and indicate the purposes of the program. If not, explain.

(b) Are course sequences, especially those expressed in terms of prerequisites, based upon content needed, prescribed as a means of administrative convenience, or predicated on the maturity of the student or some other factor?

(c) Is the administration of course sequences or curricula rigid or flexible? Explain the reasons for the practice that prevails.

(d) What efforts are made to secure effective articulation of sequential courses? Is the existing articulation efficient?

These questions are raised primarily with reference to the undergraduate level, but they may also be pertinent at the graduate level.

Charts have been prepared to show the program or programs of study within the several departments. Copies of these charts should be available about December 15th.

9. Departmental policy of development

What is the basis on which new courses have been added?
Is this basis demands of students, interest of the instructor, pressure from outside groups, or courses needed to round out a curriculum?
What is the policy regarding revision of content of existing courses? Is content revised frequently? Is revision a matter left to the instructor or is it a departmental matter by the whole department or is it determined by the department head? Are revisions made gradually year by year or are they made in a large amount at greater intervals?
Does the department attempt to meet the needs of students by making changes in existing courses or by introducing new courses?
Has the department recently examined its courses to ascertain whether it would be feasible and desirable to reduce the number of courses by improved articulation and synthesis of subject matter and by eliminating obsolete material of relatively little importance?

10. Supplementary remarks.

Final note. This is a general outline and adaptations or modifications should be made in accord with general character of particular departments. However, each of the items, 1 to 9, should appear as a center head in a departmental report, even though the character of the department is such that the item is not applicable.

COURSES BY HOURS AND TYPE OF INSTRUCTION

Department..... Classification .....
(Undergraduate, Advanced Undergraduate and Graduate, etc.)

Type of Instruction	Semester Hours or Units -- Credit								Total Courses	Total Hours	Net Total Hours*
	1/2	1	2	3	4	5	6	7			
I. Lecture, recitation and/or quiz											
II. Laboratory, shop, studio, etc.											
III. Combination of I and II											
IV. Individual Instruction**											
TOTAL											

* The "Net total hours" is to be found by subtracting from the "Total hours" the number of hours in courses for which a student may not receive credit if he has taken other courses. E.g., a student with credit in Bacteriology 5a and 5b is not allowed credit in Bacteriology 20. In case the credits for mutually exclusive courses are not equal, subtract the smaller number of semester hours.

** This rubric includes thesis courses, honors courses, and other courses in which individual problems are the basis of student work.

Repeat for each classification under which courses are listed in the Annual Register. In the case of graduate courses, tabulate by units instead of semester hours.

Tabulate all courses listed in 1937-38 Register and all new courses authorized for 1938-39, except courses that have been discontinued and will not appear in the 1938-39 Register. Research courses, honors courses, and thesis courses are to be included. Undergraduate courses for which the credit is reduced in Summer Session or for which juniors or seniors receive reduced credit are to be listed under the maximum credit. Other undergraduate courses, except honors courses and thesis courses, for which the credit is variable, depending upon whether a student includes laboratory work, field work, etc., should be listed under the maximum credit. The listing of honors courses, thesis courses, and graduate courses with variable credit should be according to the typical registration of students. If repetition of registration is permitted, the courses should be listed under the typical total number of hours or units.

A course given as "continuous through both semesters" should be listed as two courses, even though the two registrations are under the same number.

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